

**EGLIN AIR FORCE BASE
Florida**

**FINAL ENVIRONMENTAL
ASSESSMENT

FOR THE

SOLAR PHOTOVOLTAIC ARRAY**



JANUARY 2014

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FINDING OF NO SIGNIFICANT IMPACT

FOR

SOLAR PHOTOVOLTAIC ARRAY ENVIRONMENTAL ASSESSMENT EGLIN AIR FORCE BASE, FLORIDA

RCS 12-693

This finding, and the analysis upon which it is based, was prepared pursuant to the President's Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of the National Environmental Policy Act (NEPA) and its implementing regulations as promulgated at 40 Code of Federal Regulations (CFR) Part 1500 (40 CFR 1500–1508), as well as the U.S. Air Force *Environmental Impact Analysis Process* as promulgated at 32 CFR Part 989.

The Department of the Air Force has conducted an Environmental Assessment (EA) of the potential environmental consequences associated with the construction and operation of a solar photovoltaic (PV) array at Eglin Air Force Base (AFB), Florida. That EA, finalized in January 2014, is hereby incorporated by reference into this finding.

PURPOSE AND NEED (EA Section 1.3, page 1-4)

The U.S. Air Force is the largest consumer of energy in the federal government, and electricity accounts for 48 percent of Air Force energy usage. In 2010, the Air Force developed two plans (*Air Force Energy Plan* and *Air Force Infrastructure Energy Plan*) to address its overall energy strategy, which includes strategies for reducing energy consumption, controlling costs, and increasing renewable generation.

The Air Force has the challenge of meeting or exceeding federal energy goals as established in the Energy Policy Act of 2005, the Energy Independence and Security Act of 2007, and departmental goals established in the *Air Force Energy Plan* and the *Air Force Infrastructure Energy Plan*. The Air Force Energy Vision is “to reduce demand through conservation and efficiency; increase supply through alternative energy sources; and create a culture where all Airmen make energy a consideration in everything they do.”

The Air Force goals, as related to renewable energy, include the following:

- Meet or exceed federal mandates
- Increase on-base renewable generation
- Control and/or reduce energy costs

Utilizing on-base renewable energy production is one aspect of Eglin's Strategic Energy Management Plan, because it increases energy supply and energy security and decreases stress on the national grid. The Department of Defense (DoD) has established goals for renewable energy generated on-base to be 25 percent of base consumption in the year 2025. In the near term, the Air Force has established a goal of on-base energy production of 7.5 percent by 2015.

Because Eglin AFB is the largest base in the Air Force, the Proposed Action would greatly aid DoD in meeting their overall goals for on-base renewable energy production. Currently, Eglin AFB uses approximately 235,000 megawatt-hours (MWh) of electricity per year.

As a result of these plans and programs, Eglin AFB is preparing this EA in support of a 16.9-MW solar PV array.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

Proposed Action (EA Section 2.3, page 2-4)

Under the Proposed Action, Eglin AFB would construct the solar PV array. A solar PV array is a method of generating electrical power by converting solar radiation into direct current electricity using semiconductors that exhibit the photovoltaic effect. Photovoltaic power generation employs solar panels composed of a number of solar cells containing a photovoltaic material. Materials presently used for photovoltaics include monocrystalline silicon, polycrystalline silicon, amorphous silicon, cadmium telluride, and copper indium gallium selenide/sulfide. Operation and maintenance of the solar PV array would be minimal, with solar panels being washed and cleaned twice a year by government personnel while ground maintenance would occur approximately three times a year using labor and equipment provided by Eglin AFB.

The solar PV array would be constructed at the preferred site located along Highway 85 and south of Range Road 230 (Figure 2-1 of the EA). The proposed site is located adjacent to the Valparaiso Substation, which is owned by Eglin AFB. The Valparaiso Substation has the capacity to handle the power generated by the solar PV array. Constructing the solar PV array at this location would allow Eglin AFB to feed the power to Eglin AFB's grid on the base side of Gulf Power's meter. All generated electricity would be consumed by Eglin AFB.

Although the solar PV array would utilize approximately 117 acres, the Proposed Action includes the clearing of the entire proposed site (approximately 165 acres of land) to provide for flexibility for design changes. The Proposed Action also includes construction of the solar PV system, construction of a perimeter fence, and routine site maintenance.

No Action Alternative (EA Section 2.4, page 2-6)

Under the No Action Alternative, the solar PV array would not be constructed. Environmental conditions would remain at baseline conditions. However, without construction and implementation of the solar PV array, Eglin AFB would not achieve its 7.5 percent on-site renewable energy generation goal by 2015.

Preferred Alternative (EA Section 2.6, page 2-7)

Eglin AFB has chosen the Proposed Action as the Preferred Alternative, as the No Action Alternative would not achieve the 2015 goal of 7.5 percent on-site renewable energy generation. Implementation of management actions would allow for construction and operation of the solar PV array while minimizing impacts to environmental and natural resources.

ENVIRONMENTAL IMPACTS

Analysis was conducted to determine the potential impacts to the human and natural environment resulting from the Proposed Action and No Action Alternatives. No significant impacts to resources have been identified under any either alternative (EA Section 2.5, pages 2-5 to 2-7), provided the management actions detailed in Chapter 5 (pages 5-1 to 5-3) of the EA would be implemented.

Soils (EA Section 3.2, pages 3-1 to 3-3) – Under the Proposed Action, soil quality would be impacted (at least temporarily) during the land clearing, site preparation, and construction of the solar panel array and fence installation within the affected environment. Eglin AFB management policies and permitting requirements would implement erosion and sediment controls at construction sites to minimize impact to soil resources.

Water Resources (EA Section 3.3, pages 3-4 to 3-8) – Under the Proposed Action, the potential for indirect impact to water resources (sediment transport by stormwater from the proposed site to Tom's Creek and Turkey Creek) would be minimized. The construction footprint for the array of solar panels on pedestals, underlying gravel and sublayer material may be semi-impervious but would minimize stormwater flow and velocity from the site, allowing more time for absorption by the Lakeland sand soil. The Air Force would adhere to permitting requirements, implementing a site-specific stormwater pollution prevention plan (SWPPP).

Biological Resources (EA Section 3.4, pages 3-9 to 3-12) – Under the Proposed Action, there would be no significant impacts to biological resources. Construction of the solar array would result in loss of approximately 165 acres of habitat at the proposed site. Land clearing and daily operations may have a localized effect on native terrestrial wildlife; however, these species would either move to another location or remain within the area and utilize remaining foliage for habitat. In addition, the proposed area represents only a small percentage of the total land area that Eglin maintains. Gopher tortoises currently at the site would be relocated along with any commensals, so there would be no significant impact to threatened and endangered species.

Air Quality (EA Section 3.5, pages 3-13 to 3-17) – Although construction emissions would increase temporarily, there would be no major impacts to air quality associated with the Proposed Action. Further, the solar array would provide energy from an alternative source, decreasing greenhouse gas emissions and working toward Eglin's 2015 alternative energy goal.

Land Use (EA Section 3.6, pages 3-17 to 3-19) – Under the Proposed Action, recreational area available to the public would be reduced; however, land use for recreation is a privilege provided only when not in conflict with sustainment of the military mission. There would be no significant impact to land use.

Utilities (EA Section 3.7, pages 3-19 to 3-22) – The Proposed Action would have beneficial impacts to utilities usage on Eglin AFB, with the additional energy generation created from the solar PV array. There would be no significant impacts to utilities during construction and installation. It is expected that when the array is operational, Eglin would generate approximately 30,000 MWh or 7.5 percent of the electricity currently used on Eglin AFB, reducing the annual consumption of electricity from outside sources.

PUBLIC NOTICE (EA Appendix C)

A public notice was published in the *Northwest Florida Daily News* on December 13, 2013 inviting the public to review and comment on the Draft EA and Draft Finding of No Significant Impact. The public comment period closed on December 31, 2013, and no public comments were received. State agency comments were received and are included in Appendix C, Public Involvement, of the Final EA.

PERMITS AND MANAGEMENT ACTIONS (EA Chapter 5, pages 5-1 to 5-3)

The following is a list of regulations, plans, permits, and management actions associated with the Proposed Action as described in Section 1.2 of the EA. The environmental impact analysis process for this EA identified the need for these requirements, and the proponent and interested parties involved in the Proposed Action cooperated to develop them. These requirements are, therefore, to be considered as part of the Proposed Action and would be implemented through the Proposed Action's initiation. The proponent is responsible for adherence to and coordination with the listed entities to complete the plans, permits, and management actions.

Regulations, Plans, and Permits

- Coastal Zone Management Act (CZMA) Consistency Determination (Appendix B)
- SWPPP
- Florida Department of Environmental Protection (FDEP) National Pollutant Discharge Elimination System (NPDES) Permit
- Environmental Resource Permit

Management Actions

Soils

- Describe slopes, drainage patterns, areas of soil disturbance, areas where stabilization practices will occur, water locations, and storm discharge locations.
- Describe erosion and sediment controls, BMPs, and construction site measures (e.g., implementing mitigation measures such as vegetating barren slopes more than 15 percent, and using hay bales and silt fences to reduce surface runoff into local waterways).
- Outline stabilization and structural plans to permanently stabilize soils and divert water off-site and manage stormwater.
- Provide control for potential pollutants, use approved state and local plans, and prevent nonstormwater discharges.
- Provide for maintenance and inspection of all designed systems.
- Sequence construction activities to limit the soil exposure for long periods of time.

Water Resources

- Do not alter natural flow patterns of streams by diverting water, causing siltation, or damming any portion of the stream or its tributaries.
- Vehicles and equipment must stay a minimum of 50 meters (164 feet) from the edge of slopes leading down to streams.
- For permitted off-road vehicle use: Do not drive vehicles in or across streams except at designated crossing points.
- Tree clearing of any species is not permitted unless approved by Eglin Natural Resources Office.
- Install and maintain entrenched silt fencing and hay bales along the perimeter of the construction site prior to any ground-disturbing activities and maintain them in effective, operating condition prior to, during, and throughout the entire construction process to prevent fill material, pollutants, and runoff from entering wetlands or other surface waters.
- Maintain at least a 100-foot vegetated buffer between construction sites and surface waters.
- Incorporate a monitoring plan, especially after rain events, to observe the effectiveness of silt fencing, hay bales, and/or other erosion and sedimentation control devices and address modification as needed. Any failures would be carefully examined and corrected to prevent reoccurrence.
- Replant cleared and disturbed areas with native vegetation and grasses or mulch when the final grade is established to reduce/prevent erosion. Note: For this action, gravel was proposed for the ground cover under the solar array with a 150-foot buffer to prevent potential fire hazard to solar panel array.
- Where applicable, reduce erosion using rough grade slopes or terrace slopes.
- Identify areas of existing vegetation that the proponent would retain and not disturb by construction activities.
- Any repairs, maintenance, and use of construction equipment (i.e., cement mixers) would take place in designated “staging areas” designed to contain any chemicals, solvents, or toxins from entering the affected environment.
- Stabilize construction site entrance using Florida Department of Transportation-approved stone and geotextile (fiber fabric).
- Equip all work sites with adequate waste disposal receptacles for liquid, solid, and hazardous wastes to prevent construction and demolition debris from leaving the work site.
- Utilize proper site planning, low-impact design principles, and adequately engineered stormwater retention ponds (or swales) to manage stormwater (on-site) and prevent discharges into nearby surface waters. The design would take into consideration the landscape of the area and physical features to determine whether a retention pond or

series of swales would be used to contain runoff. In accordance with FDEP regulations, a Florida-registered professional engineer would design the proposed retention feature.

- Design open channels and outfall ditches to include plans so that they do not overflow their banks.
- Where flow velocities exceed 2 cubic feet per second, provide ditch pavement or other permanent protection against scouring. Revegetate unprotected ditches with permanent material to provide an erosion resistant embankment.
- Provide all construction personnel with proper training regarding all management techniques.

Biological Resources

- Facility location(s) and orientation(s) would be designed to minimize the loss of trees, particularly longleaf pines.
- A gopher tortoise survey is required before construction activities begin. Any tortoises found would be relocated. Any burrows on the project site would be investigated for the presence of the eastern indigo snake. Burrows would be collapsed after investigation and relocation, if applicable, to deter subsequent occupation by additional gopher tortoises or other wildlife.

Air Quality

- Construction activities would employ standard management measures, such as watering of graded areas, covering soil stockpiles, and contour grading (if necessary), to minimize temporary generation of dust and particulate matter.
- Diesel-powered highway and nonroad vehicles and engines used in construction would limit idling time to 3 minutes, except as necessary for safety, security, or to prevent damage to property, and such exhausts would be located the maximum feasible distance from any building fresh air intake vents.

Utilities

- Coordination with all utility providers would be required prior to any ground-disturbing activities in an effort to minimize potential conflicts between utility providers.

Cultural Resources

- No known cultural resources are located in the vicinity of the project area. However, in the event that additional archaeological resources are inadvertently discovered during construction, 96th Civil Engineer Group/Cultural Resources Office would be notified immediately and further ground-disturbing activities would cease in that area. Identified resources would be managed in compliance with federal law and Air Force regulations.

FINDING OF NO SIGNIFICANT IMPACT

Based on my review of the facts and the environmental analysis contained in the attached EA, and as summarized above, I find the proposed decision of the Air Force to implement the Preferred Alternative, will not have a significant impact on the human or natural environment; therefore, an environmental impact statement is not required. This analysis fulfills the requirements of the NEPA, the President's CEQ, and 32 CFR Part 989.



SHAWN D. MOORE, Colonel, USAF
Commander, 96th Civil Engineer Group

24 Jan 2014

Date

**FINAL
ENVIRONMENTAL ASSESSMENT
FOR THE
SOLAR PHOTOVOLTAIC ARRAY**

Submitted To:

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JANUARY 2014



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ACRONYMS, SYMBOLS, AND ABBREVIATIONS

96 CEG/CEVC	96th Civil Engineer Group/Environmental Compliance Branch
96 CEG/CEVSN	96th Civil Engineer Group/Natural Resources Section
96 CEG/CEVSP	96th Civil Engineer Group/Environmental Analysis Section
96 TW	96th Test Wing
ACAM	Air Conformity Applicability Model
AFB	Air Force Base
AFI	Air Force Instruction
ASL	above sea level
BMP	best management practice
BRAC	Base Realignment and Closure
C&D	construction and demolition
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	carbon monoxide
CO₂	carbon dioxide
CZMA	Coastal Zone Management Act
DoD	Department of Defense
EA	Environmental Assessment
EGTTR	Eglin Gulf Test and Training Range
EO	Executive Order
EPACT	Energy Policy Act of 2005
ERP	Environmental Resource Permit
ESA	Endangered Species Act
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
FR	Federal Register
FY	fiscal year
GHG	greenhouse gas
Hwy	Highway
JSF	Joint Strike Fighter
kWh	kilowatt-hours
µg/m³	micrograms per cubic meter
MSL	mean sea level
MW	megawatt
MWh	megawatt-hours
NEI	National Emissions Inventory
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO_x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NWFWMD	Northwest Florida Water Management District
PM₁₀	particulate matter with a diameter less than or equal to 10 microns
PM_{2.5}	particulate matter with a diameter less than or equal to 2.5 microns
ppb	parts per billion
ppm	parts per million
PV	photovoltaic
RCW	red-cockaded woodpecker
ROI	region of influence

ACRONYMS, SYMBOLS, AND ABBREVIATIONS, CONT'D

SHPO	State Historic Preservation Officer
SO_x	sulfur oxides
SWPPP	Stormwater Pollution Prevention Plan
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey
VOC	volatile organic compound
WRCA	Water Resource Caution Area

1. PURPOSE AND NEED FOR ACTION

1.1 INTRODUCTION

This Environmental Assessment (EA) analyzes potential environmental impacts of constructing and operating a solar photovoltaic (PV) array on Eglin Air Force Base (AFB), Florida. The Eglin military complex is a U.S. Air Force-controlled, multiservice Department of Defense (DoD) Major Range and Test Facility Base and training area. Its primary function is to support research and development of conventional weapons and electronic systems, as well as individual and joint training of operational units.

Eglin AFB is located in the Florida Panhandle in portions of Okaloosa, Santa Rosa, Walton, and Gulf Counties (Figure 1-1). The base is a national asset of the Air Force Materiel Command headquartered at Wright-Patterson AFB, Ohio, and the Air Force Test Center headquartered at Edwards AFB, California.

As the host wing for Eglin AFB, the 96th Test Wing (96 TW) is the test and evaluation center for air-delivered weapons, navigation and guidance systems, Command and Control systems, and Air Force Special Operations Command systems. The 96 TW performs development test and evaluation across the complete system life cycle for a wide variety of customers, including Air Force Systems Program Offices, Air Force Research Laboratory, logistics and product centers, Major Commands, other DoD services and U.S. government agencies, foreign military sales, and private industry. The 96 TW commander serves as the installation commander. In addition, the 96 TW supports Eglin with traditional military services, civil engineering, personnel, logistics, communications, computer, medical, security, and all other host services and base operating support functions (U.S. Air Force, 2012).

Eglin AFB comprises 724 square miles of reservation land with 36 specific test areas and approximately 125,000 square miles of charted airspace referred to as the Eglin Gulf Test and Training Range (EGTTR), which extends south to the Florida Keys. The EGTTR is the largest water test range in the continental United States. Eglin's primary function is supporting research, development, test, and evaluation of conventional weapons and electronic systems and joint training of operational units. Serving several DoD components responsible for developing, testing, and operating weapons systems, Eglin AFB is one of several DoD installations composing the Major Range and Test Facility Base. Included in the Eglin Reservation are 10 auxiliary fields, 5 active and 5 inactive, and the only supersonic overland range east of the Mississippi River.

The Eglin Test and Training Complex (test areas, interstitial areas, airspace, frequency spectrum, and the EGTTR) is composed of four components, generally referred to as its "schedulable resources": test areas/sites, interstitial areas, Gulf of Mexico, and airspace (over land and water) (Figure 1-2). Interstitial areas are defined as areas beyond and between test areas used primarily for safety.

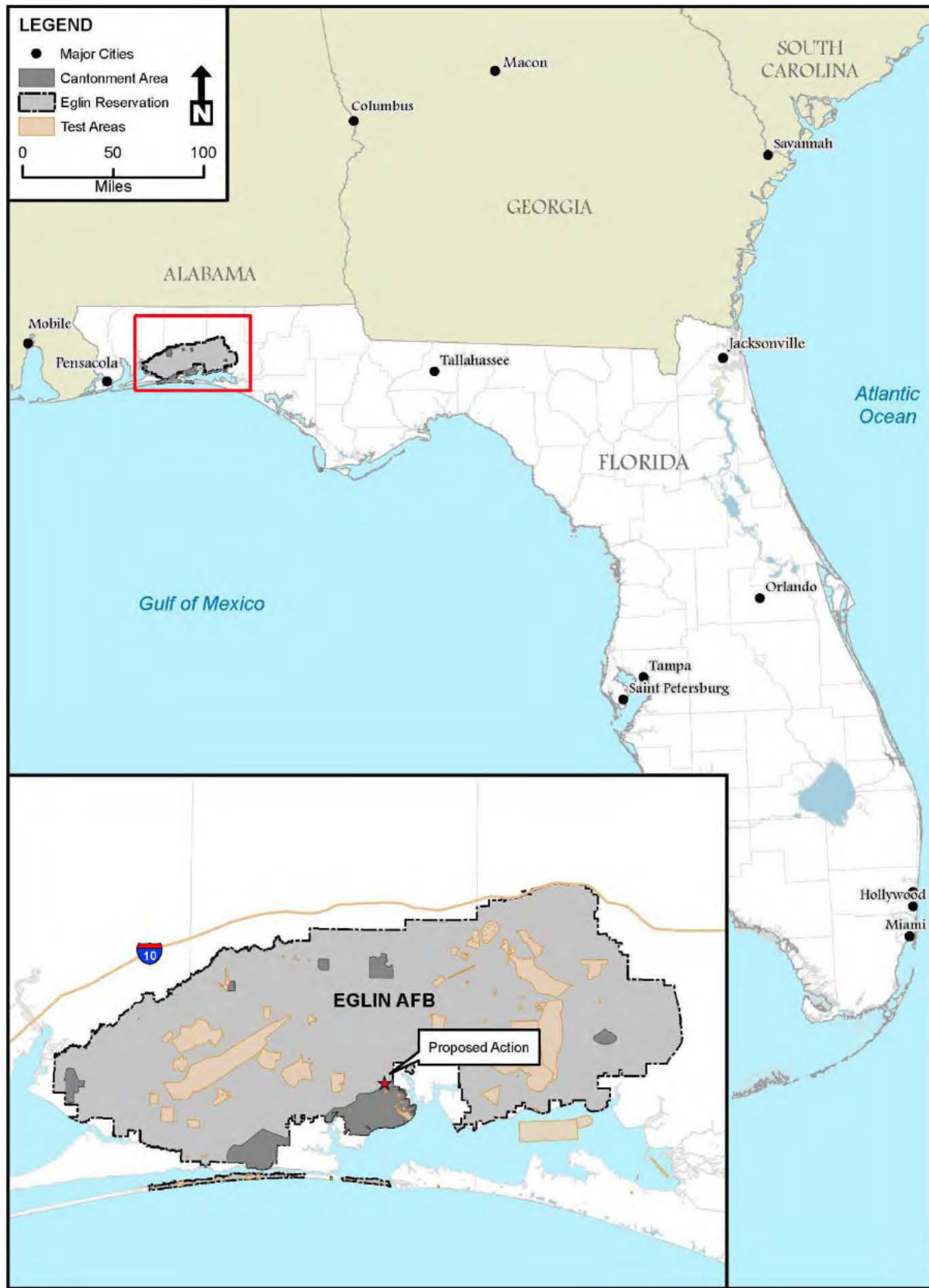


Figure 1-1. The Eglin Military Complex

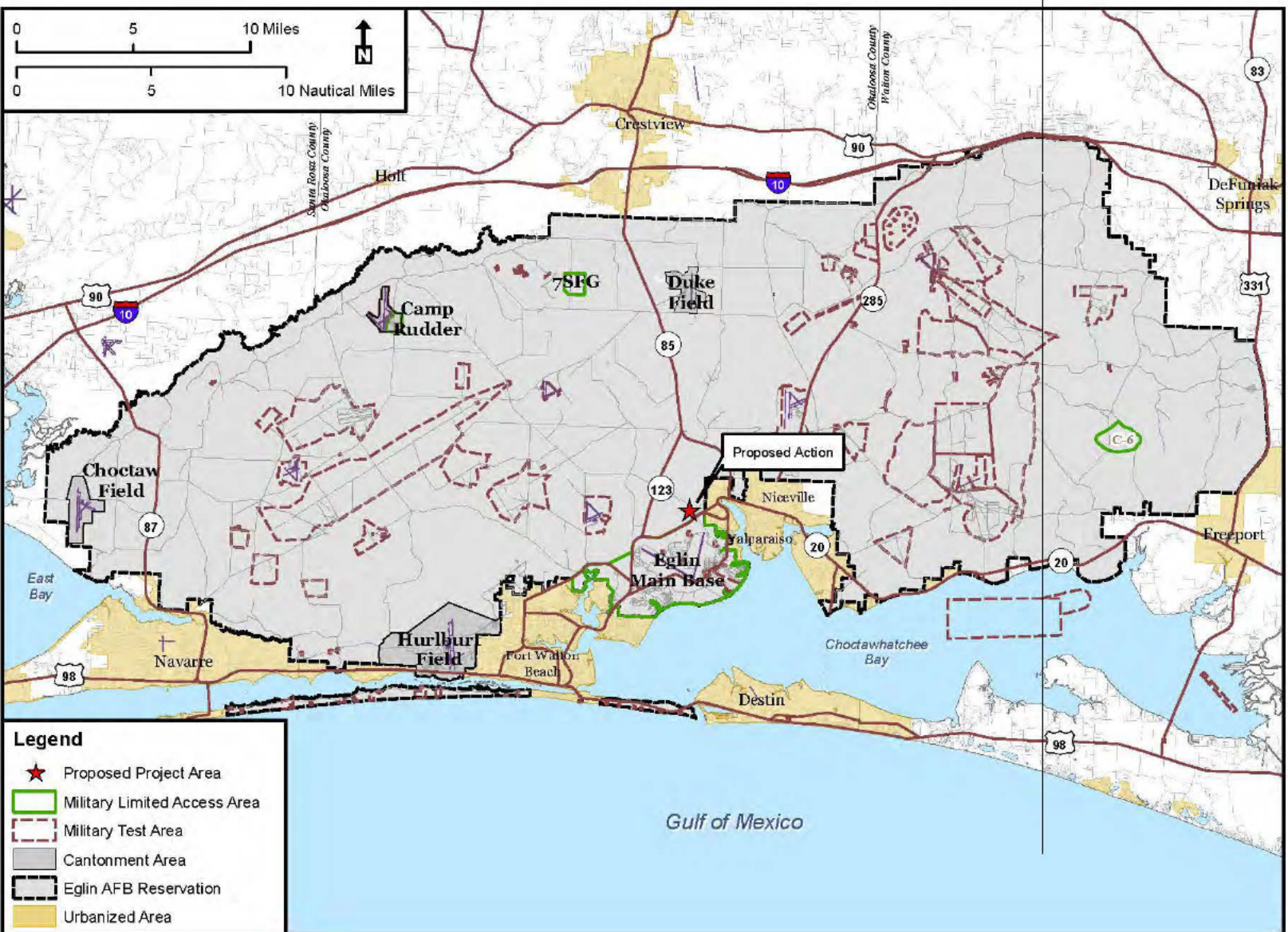


Figure 1-2. Land Test Areas and Interstitial Test Areas Composing the Eglin Military Complex

1.2 PROPOSED ACTION

Eglin AFB proposes to develop a utility scale solar project on Eglin AFB property. The solar PV system being proposed is 16.9 megawatts (MW) (direct current output) in size, with single-axis tracking and monocrystalline solar modules. The size and design of the system are being implemented to reduce Eglin AFB's peak load; however, maximizing cost efficiencies for installation and for life cycle costs of the system were also considered. The solar system would be installed on Eglin AFB property and connected to an Eglin AFB-owned substation. Eglin AFB would assume ownership of the system once it has met contractual verification and is certified operational. Capital financing of the proposed project would be provided through a Utility Energy Services Contract with one of the utility companies that have area-wide contracts that support Eglin AFB.

The system would contain 69,000 solar panels positioned on a racking system designed to withstand winds of 145 miles per hour. The system design would require approximately 85 acres of cleared land, and an additional 150-foot buffer is needed to eliminate shading and minimize the potential for falling trees or branches that could potentially damage the solar panels. The 150-foot buffer equates to 32 acres for a total project size of approximately 117 acres. The solar PV system would generate over 30,000 megawatt-hours (MWh) of electricity per year, which is more than 7.5 percent of Eglin AFB's usage in 2012. Solar PV systems of this type have a life expectancy in excess of 30 years. This proposed project does not rely on any federal or state subsidies for the project to be economically favorable.

1.3 PURPOSE AND NEED FOR THE ACTION

The U.S. Air Force is the largest consumer of energy in the federal government, and electricity accounts for 48 percent of Air Force energy usage. In 2010, the Air Force developed two plans (*Air Force Energy Plan* and *Air Force Infrastructure Energy Plan*) to address its overall energy strategy, which includes strategies for reducing energy consumption, controlling costs, and increasing renewable generation (U.S. Air Force, 2010a,b).

The Air Force has the challenge of meeting or exceeding federal energy goals as established in the Energy Policy Act of 2005, the Energy Independence and Security Act of 2007, and departmental goals established in the Air Force Energy Plan and the Air Force Infrastructure Energy Plan referenced above. The Air Force Energy Vision is "to reduce demand through conservation and efficiency; increase supply through alternative energy sources; and create a culture where all Airmen make energy a consideration in everything they do."

The Air Force goals, as related to renewable energy, include the following:

- Meet or exceed federal mandates
- Increase on-base renewable generation
- Control and/or reduce energy costs

Utilizing on-base renewable energy production is one aspect of Eglin's Strategic Energy Management Plan because it increases energy supply and energy security and decreases stress on

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As a result of these plans and programs, Eglin AFB is preparing this EA in support of a 16.9-MW solar PV array.

1.4 SCOPE OF THE PROPOSED ACTION

This EA discusses the potential impacts to the environment associated with construction and operation of the solar PV system. The region of influence for this analysis includes the area located north of Highway (Hwy) 85 and south of Range Road 230 (see Figure 2-1). The 165-acre site available for development is located adjacent to the Valparaiso Substation, which is owned by Eglin AFB. Currently, the Proposed Action would utilize approximately 117 acres; however, to provide flexibility for design changes, the full 165 acres were analyzed.

1.5 DECISION DESCRIPTION

The Air Force desires to authorize the proposed development of a solar PV array with minimal environmental consequences. By identifying areas where environmental impacts would not occur, using geospatial and environmental analysis, the Air Force will be better positioned to implement the Proposed Action in order to meet the growing needs of the Air Force and Eglin AFB.

1.6 ISSUES

Specifically, an issue may be the result of a development activity or land use activity that may directly or indirectly impact physical, biological, and/or cultural resources. A *direct* impact is a distinguishable, evident link between an action and the potential impact, whereas an *indirect* impact may occur later in time and/or may result from a direct impact.

To determine potential environmental impacts of alternative actions on the proposed site, resource areas were identified through preliminary investigation. Resource areas eliminated from further analysis are discussed in Section 1.6.1. Resource areas identified for detailed analysis are described in Section 1.6.2, along with a summary of the preliminary screening for potential impacts.

1.6.1 Resource Areas Eliminated From Detailed Analysis

Airspace

Airspace was evaluated by the Air Force in a Mission Impact Analysis, which determined that the PV array must preserve special use airspace and the height of the PV array could not obstruct the approach/departure corridor. In each case, the Proposed Action met these two criteria. In addition, the Mission Impact Analysis criteria indicated that any glare associated with the PV array must not reflect toward the airfield or the air traffic control tower. Airspace was eliminated from further analysis, since the Proposed Action met all of the constraints criteria of the Mission Impact Analysis, and there were no anticipated impacts to airspace.

Chemical Materials

Chemical materials encompass liquid, solid, or gaseous substances that are released into the environment as a result of development activities. These include organic and inorganic materials that can produce a chemical change or toxicological effect to an environmental receptor. The chemical materials that can accumulate in the environment through repeated use represent the highest potential for environmental impact. For Eglin cantonment area development, this primarily includes petroleum, oils, and lubricants associated with construction and demolition machinery. Release of these materials into the environment during land clearing and construction activities are not expected.

There are no known Environmental Restoration Program sites within the project site. Should any unusual odor, soil, or groundwater coloring be encountered during development activities, Eglin AFB's Environmental Restoration Branch would be contacted immediately.

Noise

Noise is defined as the unwanted sound produced by mission activity and its associated expendables. Noise may directly inconvenience and/or stress humans and some wildlife species and may cause hearing loss or damage. Noise associated with land clearing and construction activities would be temporary and limited to daytime hours and are not expected to result in any significant impacts to the local community and was eliminated from further detailed analysis.

Socioeconomics and Environmental Justice

Potential socioeconomic impacts include those that would expose low-income and minority populations to disproportionate negative impacts or pose special risks to children (under 18 years old) due to noise and other conditions in cantonment areas adjacent to communities. The socioeconomic receptors include nearby communities and property that are impacted by the noise from Eglin AFB construction. Some of these communities include low-income or minority populations. Construction noise would be limited to daytime hours and would be temporary. Therefore, no significant impacts to the local community, including low-income or minority populations, would be expected.

Cultural Resources

Potential effects to cultural resources would include disturbance or destruction of sites or artifacts, including historic buildings, structures, districts, and landscapes that would likely be impacted by the Proposed Action. Physical disturbance and/or the destruction of cultural resources could occur from development activities. Analysis focuses on cultural site locations and the likelihood of site disturbance and/or destruction.

The proposed project area has been surveyed for archaeological deposits, and no eligible resources were recovered. Eglin AFB conducted a Section 106 consultation with the State Historic Preservation Officer (SHPO), and the SHPO concurred with the findings (Appendix A, *Cultural Resources*). However, in the event of unexpected discovery of cultural resources during project implementation, all activity in the immediate vicinity must cease until the proponent makes proper notification to the Base Historic Preservation Officer and the Eglin AFB Cultural Resource Section.

Safety/Restricted Access

Safety involves hazards to military personnel and the public resulting from construction or mission activities. Restricted access is typically the result of safety considerations but may also result from site security or electromagnetic radiation hazards. Restricted access applies to the restriction of public access, described in terms of the availability of Eglin resources (such as test areas, interstitial/recreational areas, or public roads) to the general public. Receptors potentially impacted include military personnel and the public desiring to use these areas. Guidance for restricted access is utilized to coordinate public and military use of airspace, water space (e.g., the Gulf of Mexico), and land areas within the Eglin region of influence. Under the Proposed Action, the proposed site would be permanently closed to the public. Potential impacts to public recreation and hunting is discussed in Section 1.6.2 under “Land Use and Recreation.”

Solid Waste

All land-clearing debris is expected to be utilized within the paper/pulp industry, mulched for reuse, or burned on-site under a burn permit. Using these methodologies for management of land-clearing wastes, no material generated during land clearing is expected to require disposal.

1.6.2 Resource Areas Identified for Detailed Analysis

Soils

Soils on Eglin AFB areas have the potential to be impacted from development activities. Analysis addresses the potential for erosion from construction and/or demolition activities.

Water Resources

There are no water resources (surface waters, wetlands, or floodplains) within the proposed site. However, the Proposed Action has the potential to impact water resources located in close proximity to the proposed site from construction and/or demolition activities. Analysis of water

resources addresses the potential for impacts to surface waters, wetlands, floodplains, and groundwater from sedimentation and/or contamination from development activities.

Biological Resources

Biological resources may be affected by the Proposed Action. Issues to be examined include potential impacts on wildlife, sensitive species, and habitats from direct physical impact, habitat alteration, and noise. The direct physical impact is the physical harm that can occur to an organism (plant or animal) if it comes into contact with an effector, such as a piece of construction machinery. Species may be directly hit or crushed by construction or demolition machinery.

Habitat alterations are described as the physical damage or perturbations to terrestrial and aquatic habitats. Habitat alteration can occur as a result of grading or other development actions. The major issues for this category are the potential loss of gopher tortoise burrows, gopher frog ponds, potential flatwoods salamander ponds, and red-cockaded woodpecker (RCW) trees/foraging habitats from development activities such as construction and demolition and associated vehicle use. Gopher tortoise burrows are used by several sensitive species besides the gopher tortoise, including the gopher frog, indigo snake, and Florida pine snake.

Noise produced by construction and demolition may stress some wildlife species, cause behavioral alteration (such as flushing or vacating an area), or cause hearing loss/damage. Scientific data correlating the effects of noise on humans are well documented; however, information regarding the effects of noise events on wildlife species is limited.

Analysis focuses on identifying sensitive species and habitats within the proposed site for the solar PV array, analyzing the potential for impacts, and establishing management actions for the avoidance and/or minimization of identified potential impacts.

Air Quality

Construction, demolition, and other development efforts produce particulate matter and combustive emissions from construction equipment and worker vehicles. Analysis addresses the expected levels of emissions and compares these levels with what is currently permitted from all Eglin AFB sources and county emissions.

Land Use and Recreation

Land use generally refers to human management and use of land. Specific uses of land typically include residential, commercial, industrial, agricultural, military, and recreational. Land use also includes areas set aside for preservation or protection of natural resources, wildlife habitat, vegetation, or unique features. The proposed site is currently utilized for direct mission support and falls within Tactical Training Areas K-5 and K-6. Additionally, the proposed site is open to the public for recreation and hunting when not being used for military training. Under the Proposed Action, the proposed site would become permanently closed to military training and the public; therefore, potential impacts to land use and recreation are analyzed.

Utilities

This EA examines the potential impact on the existing electrical system. Utilities such as water, gas and wastewater management are not included in the analysis, as they would not be impacted by the Proposed Action.

Cumulative Analysis

The cumulative analysis includes other anticipated future projects that may contribute to a cumulative effect on the environment when implemented in conjunction with the Proposed Action. An example would be the additive regional air quality impacts of concurrent construction of the Mid-Bay Bridge Connector and the construction of facilities on Eglin Main Base.

1.7 FEDERAL PERMITS, LICENSES, ENTITLEMENTS, AND OTHER REGULATORY REQUIREMENTS

Some components of this action would take place within, or otherwise may affect, the jurisdictional concerns of the Florida Department of Environmental Protection (FDEP); therefore, they will require a consistency determination with respect to Florida's Coastal Zone Management Plan under the federal Coastal Zone Management Act (CZMA) (Appendix B, *CZMA Consistency Determination*). In addition, all construction activities with the potential to impact stormwater quality or disturb more than 1 acre of land must be permitted under the National Pollutant Discharge Elimination System (NPDES) regulations as administered by FDEP. The Air Force would obtain from the FDEP a Generic Permit for Stormwater Discharge for Large and Small Construction Activities prior to project initiation according to Florida Administrative Code (FAC) Rule 62-346. Compliance with these regulations involves developing and implementing a Stormwater Pollution Prevention Plan (SWPPP) during the construction phases of the Proposed Action.

An Environmental Resource Permit (ERP) would be required for land clearing associated with construction on more than 1 acre that would alter surface water flow. The ERP would regulate the stormwater treatment and control after construction under the Proposed Action is complete and would continue throughout the life of the site. The Northwest Florida Water Management District (NFWFMD), who administers ERPs on behalf of the FDEP, would approve the design and build of any treatment/control.

Several laws and regulations are pertinent to the treatment of cultural resources, such as the National Historic Preservation Act of 1966 (NHPA), as amended, the Archaeological Resources Protection Act of 1979, and Air Force Instruction (AFI) 32-7065, *Cultural Resources Management*, which specifies proper procedures for cultural resource management at Eglin AFB. To comply with Section 106 of the NHPA, the Air Force has consulted with the SHPO on the potential impacts associated with this action. SHPO concurrence is included in Appendix A, *Cultural Resources*.

1.8 ORGANIZATION OF THE DOCUMENT

This EA contains seven chapters. Chapter 1 details the purpose and need for the Proposed Action. It also summarizes the scope of the environmental review. Chapter 2 details the Proposed Action and alternatives considered, including the No Action Alternative. Chapter 3 generally describes the current conditions, the affected environment, and environmental consequences of the Proposed Action. Chapter 4 provides an analysis of cumulative impacts and irretrievable commitment of resources. Chapter 5 identifies permitting requirements, mitigations, and management practices for minimizing potential impacts. Chapter 6 lists the preparers of this EA. Chapter 7 lists publications cited in this report.

2. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

2.1 INTRODUCTION

The Energy Office on Eglin AFB has investigated various sources of renewable energy in order to comply with the Energy Policy Act of 2005 (EPACT) and subsequent regulations that expanded and clarified the requirement to generate 25 percent of energy needs from renewable sources by 2025. Of those renewable options evaluated, the most promising for implementation at Eglin AFB were biomass and solar PV array.

Biomass energy production would require a significant capital investment to construct a wood fired boiler that would provide heat energy to a steam turbine to generate electricity. The purpose of this type of plant is to provide a steady power supply also known as a “base load.” The solar PV array supplies intermittent load, mostly during peak load times. These two options are not mutually exclusive but are complementary in power generation. These two options are being pursued independently, and the solar PV array, the Proposed Action of this EA, is an immediate need of Eglin AFB.

2.1.1 Alternative Development

The National Environmental Policy Act (NEPA) and its companion regulations require the Air Force to develop and identify reasonable alternatives to a proposed action. In determining the scope of alternatives to be considered, emphasis is placed on what is “reasonable.” Reasonable alternatives include those “that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant” (Council on Environmental Quality [CEQ], 2010).

In order to develop reasonable alternatives for the solar PV array, the Eglin Energy Office employed many of the criteria utilized in developing siting criteria for a biomass facility. As a result, three key criteria were utilized in developing the solar PV array alternative locations. These are:

- Substation with the capacity to handle the power generated from the designed solar PV array.
- The location must be a limited distance from electrical transmission infrastructure.
- Utilization of transmission lines that would not require tolling power over Gulf Power lines.

Several locations were evaluated, including:

- A site north of Duke Field on Hwy 85
- A site on the landfill adjacent to the Arbennie-Pritchett Wastewater Treatment Facility
- Valparaiso Substation site (located at the triangle between Hwy 85, Hwy 189, and General Bond Boulevard)

The Eglin Energy Office determined that only Valparaiso Substation site meets all three criteria. This site is located less than 2 miles from the Valparaiso Substation owned by Eglin AFB. This substation has the capacity to handle the power that would be generated from the solar PV array and would allow Eglin AFB to feed the power to Eglin's grid on the base side of Gulf Power's meter, which would not result in tolling charges.

This chapter describes the alternatives evaluated for potential environmental impacts in this EA based on the alternative development criteria. The proposed alternatives, which are analyzed in this document, are:

- No Action Alternative: Baseline, as defined by the existing condition. The solar PV array would not be implemented under the No Action Alternative.
- Proposed Action: The 16.9-MW solar PV array would be constructed on the 165-acre site located north of Hwy 85 and south of Range Road 230 (Figure 2-1).

2.2 ALTERNATIVES CONSIDERED BUT ELIMINATED

2.2.1 Alternative 1: Smaller Solar PV Systems

A range of solar PV system sizes were evaluated from as small as 1.5 MW up to the currently proposed size of 16.9 MW. Because of the cost efficiencies gained through larger systems, the minimum size that has positive economic benefits is approximately 12 MW. However, a 12-MW system would not achieve Eglin AFB's 7.5 percent 2015 on-site renewable energy generation goal.

"Distributed generation" was evaluated. This method would entail the installation of numerous smaller solar PV systems on the roofs of various buildings on the base. This alternative was rejected due to costs associated with individual building designs and modifications to accommodate smaller systems.

Eglin AFB personnel also evaluated the possibility of building three smaller systems: one located on Eglin Main Base, one near the Westgate Substation, and one near the Hurlburt Field Substation. This was rejected due to operation complexity and costs.

2.2.2 Alternative 2: Fixed Racking Solar PV Systems

Design options were evaluated that considered using a nontracking, fixed system. For these scenarios, the solar panels do not track from east-to-west to follow the daily path of the sun, but instead are in a fixed system facing due south and on a fixed angle toward the sun. The energy generation from this design was projected to be far less than from the single-axis tracking system, which would be less cost efficient.

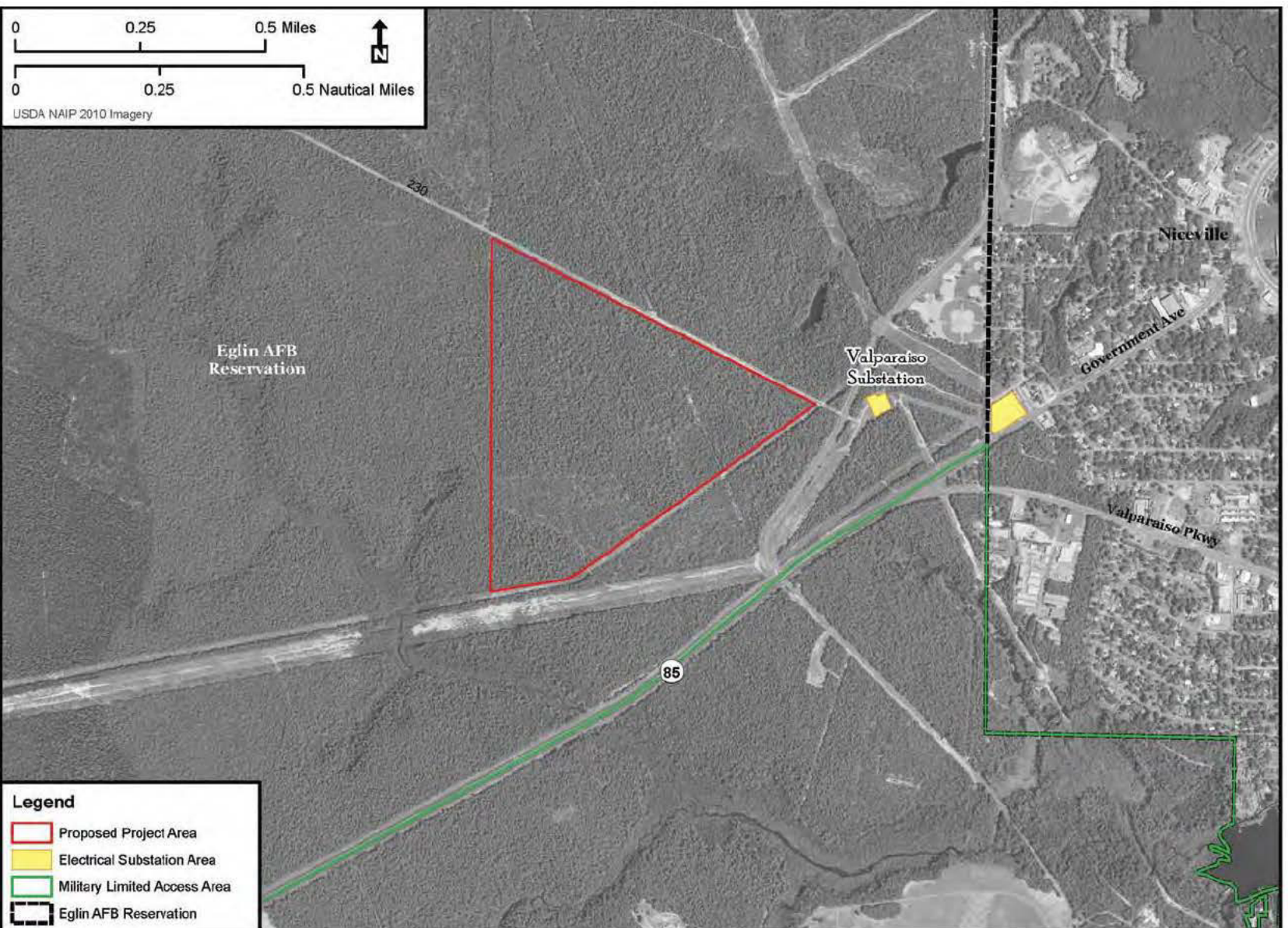


Figure 2-1. Proposed Location for the Solar Photovoltaic Array

2.2.3 Alternative 3: Other Site Locations

Several sites on Eglin AFB were evaluated while studying the possibility of a solar PV array (Figure 2-2). These sites included a site north of Duke Field on Hwy 85, a site on an old landfill near the new Okaloosa County wastewater treatment plant, and the triangle-shaped site between Hwy 85, Hwy 189, and General Bond Boulevard. All three of the alternative sites were excluded due to the distance from these sites to required electrical infrastructure. These sites would require tolling over Gulf Power electrical lines or Eglin AFB would have to build new power lines, which would incur an additional charge. Additionally, Eglin AFB's Westgate Substation is not capable of handling the amount of power generated.

2.2.4 Alternative 4: Contracting/Lease/Ownership Options

Eglin AFB personnel engaged with a private company that approached Eglin AFB for a possible Power Purchase Agreement for solar PV-generated power. The solar PV system would have been developed, owned, and operated by the private company, on company-owned property, located directly east of the Eglin Reservation. This alternative was not carried forward because the company could not meet cost requirements.

A solar array project was also evaluated as a power purchase project, with the utility provider Gulf Power Company building the system and then selling the power to Eglin AFB. Gulf Power determined they could not build and operate the facility cost effectively; therefore, this option was not carried forward.

2.3 PROPOSED ACTION

Under the Proposed Action, Eglin AFB would construct the solar PV array. A solar PV array generates electrical power by converting solar radiation into direct current electricity using semiconductors that exhibit the photovoltaic effect. Photovoltaic power generation employs solar panels composed of a number of solar cells containing a photovoltaic material. Materials presently used for photovoltaics include monocrystalline silicon, polycrystalline silicon, amorphous silicon, cadmium telluride, and copper indium gallium selenide/sulfide. Operation and maintenance of the solar PV array would be minimal, with solar panels being washed and cleaned twice a year by government personnel while ground maintenance would occur approximately three times a year using labor and equipment provided by Eglin AFB.

The preferred site for construction of the solar PV array is located along Hwy 85 and south of Range Road 230 (Figure 2-1). The proposed site is located adjacent to the Valparaiso Substation, which is owned by Eglin AFB. The Valparaiso Substation has the capacity to handle the power generated by the solar PV array. Constructing the solar PV array at this location would allow Eglin AFB to feed the power to Eglin AFB's grid on the base side of Gulf Power's meter. All generated electricity would be consumed by Eglin AFB.

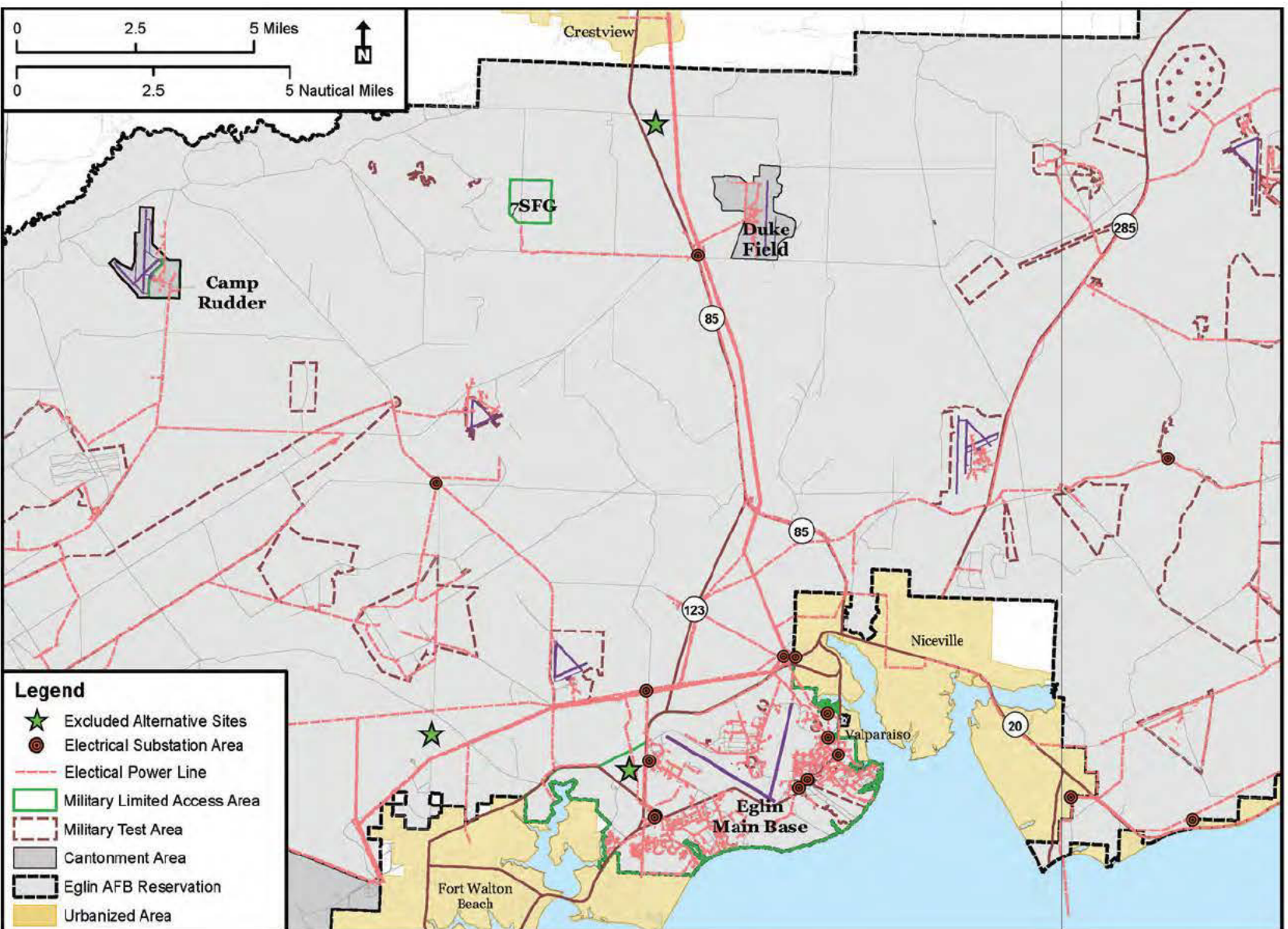


Figure 2-2. Alternative Sites Eliminated From Further Analysis

Although the solar PV array would utilize approximately 117 acres, the Proposed Action includes the clearing of the entire proposed site (approximately 165 acres of land) to provide for flexibility for design changes. The Proposed Action also includes construction of the solar PV system, construction of a perimeter fence, and routine site maintenance. Figure 2-3 illustrates the proposed site layout.

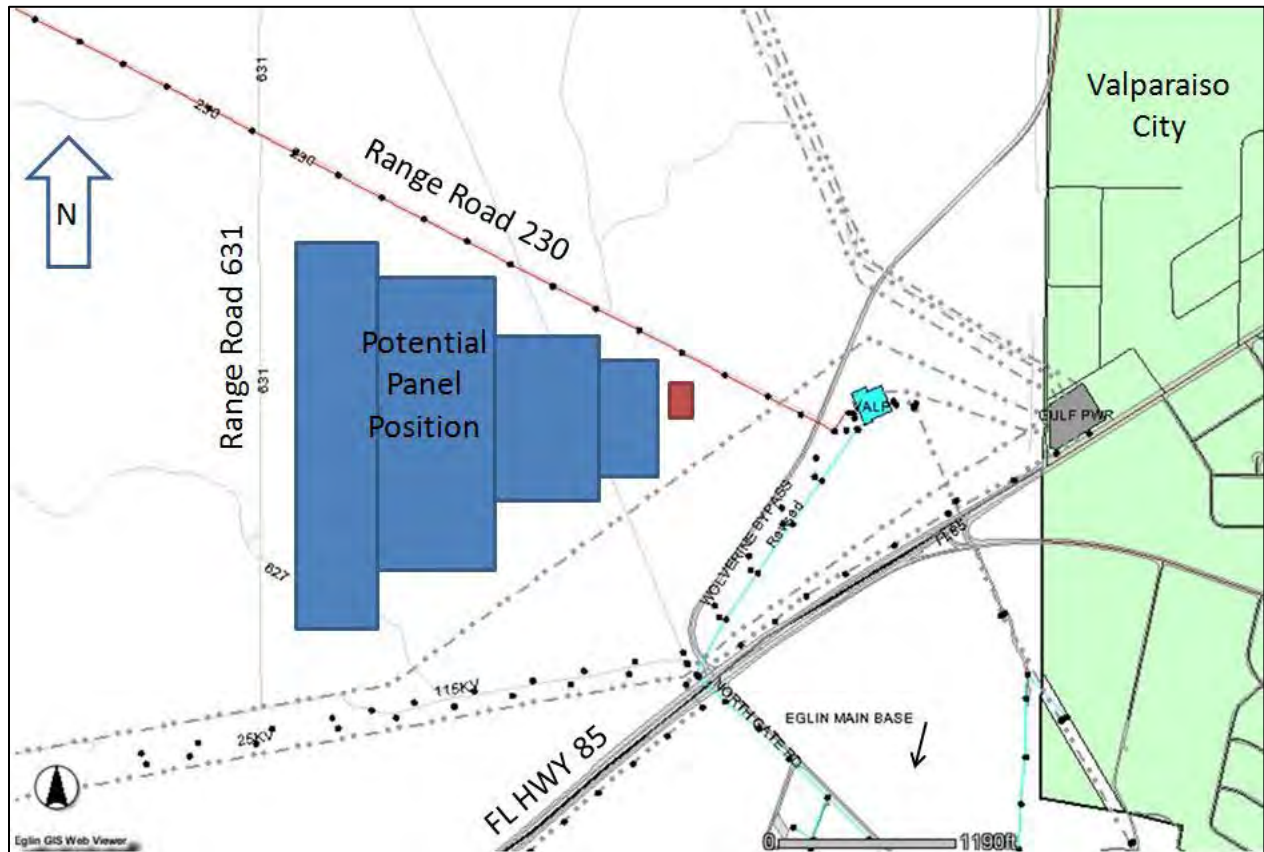


Figure 2-3. Proposed Solar PV Array Site Layout

2.4 NO ACTION ALTERNATIVE

Under the No Action Alternative, the solar PV array would not be constructed. Environmental conditions would remain at baseline conditions. However, without construction and implementation of the solar PV array, Eglin AFB would not achieve its 7.5 percent on-site renewable energy generation goal by 2015.

2.5 COMPARISON OF ALTERNATIVES

Potential impacts under each alternative are summarized in Table 2-1.

Table 2-1. Summary of Impacts

Resource Area	No Action Alternative	Proposed Action
Soil	Under the No Action Alternative, the solar panel array and perimeter fence would not be constructed, causing no impact to soil resources, and the Air Force would not meet its renewable energy goal of 7.5% generating power from a solar photovoltaic array.	Under the Proposed Action, soil quality would be impacted (at least temporarily) during the land clearing, site preparation, and construction of the solar panel array and fence installation within the affected environment. Eglin AFB management policies and permitting requirements would implement erosion and sediment controls at construction sites to minimize impact to soil resources.
Water Resources	Under the No Action Alternative, the solar panel array and perimeter fence would not be constructed, potential degraded stormwater quality from tree clearing and construction activities, surface and subsurface stabilization improvements would not occur or indirectly impact nearby water. The Air Force would not meet its goal for 7.5% sustainable solar energy using power generated by the solar photovoltaic array.	Under the Proposed Action, the potential for indirect impact to water resources (sediment transport by stormwater from the proposed site to Tom's Creek and Turkey Creek) would be minimized. The construction footprint for the array of solar panels on pedestals, underlying gravel and sublayer material may be semi-impervious but may minimize stormwater flow and velocity from the site, allowing more time for absorption by Lakeland sand soil. The Air Force would adhere to permitting requirements, implementing a site-specific SWPPP.
Biological Resources	Under the No Action Alternative, there would be no significant impacts to biological resources. The solar array would not be constructed, the degree of human presence would not change, no habitat would be disturbed, and no trees would be removed. Wildlife use of the area would not change compared with current conditions.	Under the Proposed Action, there would be no significant impacts to biological resources. Construction of the solar array would result in loss of approximately 165 acres of habitat at the proposed site. Land clearing and daily operations may have a localized effect on native terrestrial wildlife, however, these species would either move to another location or remain within the area and utilize remaining foliage for habitat. In addition, the proposed area represents only a small percentage of the total land area that Eglin maintains. Gopher tortoises currently at the site would be relocated along with any commensals, so there would be no significant impact to threatened and endangered species.
Air Quality	Under the No Action Alternative, the solar array would not be constructed. There would be no increased emissions and no impacts to the baseline emissions for the ROI. However, Eglin would not be closer to achieving its 7.5% 2015 on-site renewable energy generation goal.	Although construction emissions would increase temporarily, there would be no major impacts to air quality associated with the Proposed Action. Further, the solar array would provide energy from an alternative source, decreasing GHG emissions and working toward Eglin's 2015 alternative energy goal.

Table 2-1. Summary of Impacts, Cont'd

Resource Area	No Action Alternative	Proposed Action
Land Use	Under the No Action Alternative, the solar panel array and perimeter fence would not be constructed, causing no impact to current recreational land use. The Air Force would not meet its renewable energy goal of 7.5% generating power from a solar photovoltaic array.	Under the Proposed Action, the military maneuver area would be reduced but not significantly when compared with the entire Eglin land range. However, the area would be closed to the public and a small fraction of the maneuver area would be reduced. The sustainment of the overall military mission takes precedence. Therefore, no significant impacts to land use would occur.
Utilities	There would be no significant impacts to existing utilities under the No Action Alternative. Benefits from the potential alternative energy created would not be realized under the No Action Alternative. In addition, Eglin AFB would not meet its goal of 7.5% energy usage from alternative sources by 2015.	The Proposed Action would have beneficial impacts to utilities usage on Eglin AFB with the additional energy generation created from the solar PV array. There would be no significant impacts to utilities during construction and installation. It is expected that when the array is operational, Eglin would generate approximately 30,000 MWh or 7.5% of the electricity currently used on Eglin AFB, reducing the annual consumption of electricity from outside sources.

GHG = greenhouse gas; MWh = megawatt-hours; PV = photovoltaic; ROI = region of influence; SWPPP = stormwater pollution prevention plan

2.6 PREFERRED ALTERNATIVE

Eglin AFB has chosen the Proposed Action as the Preferred Alternative, as the No Action Alternative would not achieve the 2015 goal of 7.5 percent on-site renewable energy generation goal. Implementation of management actions would allow for construction and operation of the solar PV Array while minimizing impacts to environmental and natural resources.

The need for additional management actions is driven by legislation, regulations, and policies that protect sensitive habitats, cultural resources, and threatened and endangered species (Chapter 5). Legislation pertaining to sensitive habitats, sensitive species, and exotic species includes the Endangered Species Act of 1973 (ESA); AFI 32-7064, *Integrated Natural Resources Management Plan*; Executive Order (EO) 11990, *Protection of Wetlands*; and EO 13112, *Invasive Species*. Regulations on treatment of threatened and endangered species, many of which are supported in sensitive habitats, will be further described in Section 3.4. Several laws and regulations are pertinent to the treatment of cultural resources, such as the NHPA, as amended; the Archaeological Resources Protection Act of 1979; and AFI 32-7065, *Cultural Resources Management*, which specifies proper procedures for cultural resources management at Eglin AFB.

3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 INTRODUCTION

This chapter describes the natural and anthropogenic environment of Eglin AFB that could potentially be impacted by the construction of the solar PV array as described in Chapter 2. Potentially affected resource areas include soils, water resources, biological resources, air quality, land use, and utilities, which are discussed in the following sections. Under each resource area section, the affected environment (definition of the resource, analysis methodology, and existing conditions) and environmental consequences are discussed. Cumulative impacts are addressed in Chapter 4. Management actions, best management practices (BMPs), and permits required to reduce or eliminate potential impacts and implement the Proposed Action are discussed in Chapter 5.

3.2 SOILS

3.2.1 Affected Environment

Definition of the Resource

Soil is produced by forces of weathering and other soil formation processes acting on parent material. The main processes of soil formation are accumulation of organic matter, leaching of calcium carbonate, reduction of iron, and the reduction of silicate clay minerals. If all of these processes do not occur, the resulting matrix is referred to as “sediment” (Overing et al., 1995).

Under certain conditions, interaction between stormwater runoff and the soil surface, in association with land disturbances, can create conditions prone to exacerbate erosion. This may result in adverse effects to land and water resources. In the absence of intervention, the loss of soil through human-induced activity can lead to erosion and permanent loss of soil. Soil erosion is a process of displacement and deposition of surface materials by either wind or water. Erosion can reduce land productivity, pollute waters, and degrade habitats (Overing et al., 1995).

Analysis Methodology

Soil types and physical properties were considered to determine the potential level of soil erosion that would occur during ground-disturbing activities conducted under the Proposed Action. If activities were to occur in an area where soil loss or erosion is high, the potential indirect impacts of sediment transport off-site could damage waterways, cause ground instability within the affected area, and impact animal and human habitats.

Soil types, land contours, nearby surface water features, and existing vegetative cover located on the proposed site were identified and mapped using GIS. A representative maximum slope for the affected environment was calculated as a ratio of height over distance using the highest land contour for height and length and the distance from that high point to the lowest elevation on the proposed site.

Existing Conditions

Figure 3-1 presents the soil type and topographic features of the proposed site. Lakeland sand soil covers 100 percent of the proposed site. Lakeland sand is the dominant soil type on Eglin AFB. Lakeland sands are primarily excessively drained, brownish-yellow sands that have developed along the tops of broad ridges and slopes. The highest elevation (110 feet above sea level [ASL]) is in the center of the parcel, gradually descending 15 to 20 feet to the east and to the northernmost boundary (along Range Road 230), then descending 40 feet to the west and to the southern boundary of the property (Figure 3-1). Throughout Eglin AFB, slopes range from 0 to 12 percent (Overing et al., 1995). However, the proposed site has only a slight elevation change, less than 5 percent slope from the center, extending to any boundary on the property.

The unique combination of almost pure sand texture and very high soil infiltration, permeability, and hydrologic conductivity has created excessively drained soils with a high capacity to move water through the soil but limited capacity to hold water and nutrients in the soil (Overing et al., 1995). The Lakeland sand soil in the affected area has moderate susceptibility to erosion, due to the high sand content, and is capable of absorbing high volumes of rainfall.

3.2.2 Environmental Consequences

Proposed Action

Under the Proposed Action, soil quality would be impacted (at least temporarily) during land clearing for site preparation and construction of the solar panel array and fence installation within the affected environment. A maximum of 165 acres would be cleared, most likely graded and compacted for ground stability, with semi-impervious gravel layer and grass planting to cover the soil surface under the array and the 150-foot buffer around the array. The gradual slope of the proposed site (less than 5 percent) is not expected to add significantly to the velocity of stormwater across the landscape.

Considering the scope of site ground disturbances during construction and the future servicing needs for the solar array, mitigating BMPs would be needed to minimize the impacts of trafficking on soil resources. Assuming that perimeter fencing, interior access roads, and interior array service corridors would be required to maintain the site and service equipment, actions would be needed to create stable, manageable conditions that control stormwater runoff, maximize infiltration of rainwater, and stabilize driving surfaces.

Gravel is proposed to be used to create drivable semi-impervious surfaces and to control vegetation. Access roads would need a compacted subgrade to support a gravel surface; otherwise, the surface would quickly degrade, because gravel would readily mix with the sandy Lakeland soils and disappear into the soil below. Small ATV-type vehicles or occasional trucks would likely service the array of panels via the internal corridors and buffer around the array. Therefore, geomembrane or geoweb type materials may be sufficient to sustain a drivable surface. With the construction of impervious to semi-impervious surfaces, stormwater engineering designs may be needed to identify the type and location of stormwater treatment practices (Rainer, 2013). In areas where gravel would not be used, grass would be planted and maintained for ground stability and to reduce potential for soil erosion.

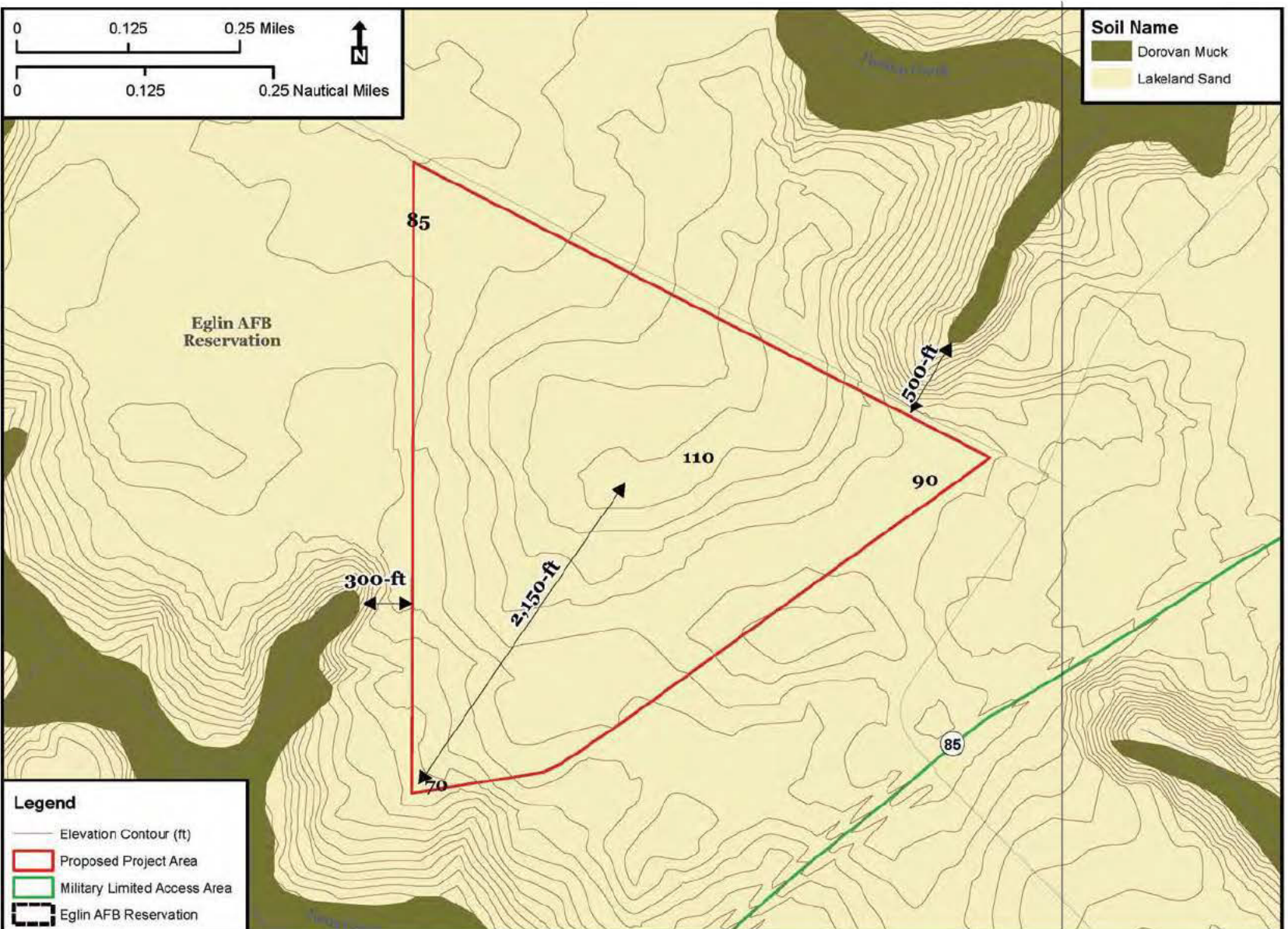


Figure 3-1. Soil Types, Land Contours, and Nearby Water Resources at the Proposed Site

Under Eglin AFB management policies, to conserve soil and natural resources, implementation of BMPs (Chapter 5) for erosion and sediment control at construction sites would minimize soil loss by stormwater runoff. The Air Force would be expected to comply with their management practices and as specified in existing or required permits. ERPs and NPDES permits are pertinent to protect soil resources, will likely be required and are discussed in Section 3.3, Water Resources, as they relate to sediment transport by stormwater runoff. No significant impacts to soils are expected to occur.

No Action Alternative

Under the No Action Alternative, the solar panel array would not be constructed nor would there be the need for the perimeter fence or road improvements for existing range roads leading onto the property. Therefore, tree clearing and construction activities would not impact soil resources on the proposed site. However, the Air Force would not meet its renewable energy goal of 7.5 percent using solar energy generated by the solar array.

3.3 WATER RESOURCES

3.3.1 Affected Environment

Definition of the Resource

Water resources potentially impacted by the Proposed Action include groundwater, surface water, stormwater, wetlands, floodplains, and the coastal zone.

Groundwater. *Groundwater* is defined by the U.S. Geological Survey (USGS) as “water that flows or seeps downward and saturates soil or rock, supplying springs and wells” (USGS, 2010). A deposit of subsurface water that is large enough to tap via a well is referred to as an “aquifer.”

Surface water. *Surface water* is defined as any water on Earth’s surface and includes lakes, rivers, and streams (USGS, 2010). Surface waters are important for a variety of reasons including economic, ecological, recreational, and human health. Surface waters have the potential to be impacted by land clearing and construction activities.

Stormwater. *Stormwater* refers to water originating from precipitation events that flows over land or impervious surface and is not absorbed into the soil or ground. Stormwater can adversely affect water quality, aquatic habitats, and the hydrologic characteristics of streams and wetlands and can increase flooding. Land-disturbing activities (such as clearing and grading) and the addition of impermeable surfaces (concrete, asphalt, etc.) would result in increases in stormwater runoff.

Wetlands. Wetlands are defined in the U.S. Army Corps of Engineers (USACE) Wetlands Delineation Manual as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas” (USACE, 1987). The majority of

jurisdictional wetlands (wetlands that fall under state or federal regulatory authority) in the United States are described using the three wetland delineation criteria: hydrophyte vegetation, hydric soils, and hydrology (USACE, 1987).

Floodplains. Floodplains are lowland areas adjacent to surface water bodies (e.g., lakes, wetlands, and rivers) that are periodically covered by water during flooding events. Federal actions occurring within flood zones require a finding of no practical alternative. Floodplains are biologically unique and are also highly diverse ecosystems that provide a rich diversity of aquatic and terrestrial species, acting as a functional part of natural systems (Mitsch and Gosselink, 2000).

Coastal zone. The CZMA provides for the effective, beneficial use, protection, and development of the U.S. coastal zone. Under the CZMA, the term “coastal zone” is defined as coastal waters and adjacent shore lands strongly influenced by each other and in proximity to the several coastal states, including islands, transitional and intertidal areas, salt marshes, wetlands, and beaches. The landward boundaries of the state of Florida are defined by the state, in accordance with Section 306(d)(2)(A) of the CZMA, as the entire state of Florida. Since all of Florida is within the coastal zone as defined by the CZMA and Florida’s Coastal Management Program, all of the potentially affected resources discussed and analyzed in this chapter are coastal resources.

Analysis Methodology

Potential indirect impacts of the Proposed Action were evaluated because of the potential for stormwater runoff to transport eroded soil (or sediment) off-site during proposed land-clearing and construction activities, especially during high rain events. The soils at the proposed site, when undisturbed, are capable of absorbing a high volume of rainfall. Land-disturbing activities (such as clearing) and the addition of impermeable or semi-impermeable surfaces (asphalt, clay, gravel, etc.) would result in rate changes and direction of stormwater flow and potential increases in stormwater runoff. Once the site is cleared, the stormwater-carried sediment may flow away from the affected environment and alter the water quality of nearby aquatic habitats and the hydrologic characteristics of nearby creeks and associated wetlands and even increase flooding. Potential indirect impacts were evaluated by calculating the distance that stormwater would travel from the affected environment to nearby surface water outside of the affected environment, permeability of the resulting ground cover used to replacement the natural vegetation (upland forest), predicted erosion potential (discussed in Section 3.2) due to change in topography (slope), and expected annual rainfall.

Existing Conditions

Groundwater. The two aquifers located under Eglin AFB are the sand and gravel aquifer and the Floridan aquifer. The Floridan aquifer is located below the sand and gravel aquifer and extends beneath peninsular Florida. The sand and gravel aquifer is not a primary source of domestic or public supply water on Eglin AFB because of the large quantities of higher-quality water available from the underlying upper limestone of the Floridan aquifer (NFWFMD, 2008). The top of the Floridan aquifer is about 50 feet below mean sea level (MSL) in the northeast corner of the base and increases to about 700 feet below MSL in the southwestern area of the

base. The top of the aquifer is about 400 to 450 feet below MSL in the Eglin Main Base area. The proposed site for the solar panel array would be, at the lowest, 70 feet ASL and more likely 110 feet ASL (center high point of the proposed site).

Increasing concerns about the existing and anticipated water supply from the Floridan aquifer has resulted in the designation of the coastal areas of Region II, south of Eglin AFB in Santa Rosa, Okaloosa and Walton Counties, as a Water Resource Caution Area (WRCA). The designation WRCA by the NFWFMD requires withdrawal permittees to implement water conservation measures and maximize their water use efficiency. In addition, permittees in the WRCA are subject to increased water use reporting requirements. The designation of WRCA also prohibits the use of the Floridan aquifer for nonpotable purposes (NFWFMD, 2008). The only Proposed Action activity mentioned that would require water is to wash solar panels with mild surfactant (soap) twice a year. It is assumed this would be accomplished using some type of water truck or pulled trailer. Wash would be rinsed onto the ground's surface, which would be covered with gravel. It is unlikely that quickly degrading surfactant would migrate to the groundwater of either aquifer. There are no existing wells on the proposed site.

Surface waters, wetlands, and floodplains. The proposed site is void of any surface water features, wetlands, or floodplains. However, there is potential for increase in stormwater runoff from land-clearing activities to indirectly impact nearby surface waters (Tom's Creek and Turkey Creek) located within close proximity to the proposed site (Figure 3-2). Tom's Creek and Turkey Creek both meander through urban development on Eglin AFB before entering Choctawhatchee Bay. Tom's Creek is approximately 300 feet from the western- and southernmost boundary of the proposed site. Turkey Creek is approximately 500 feet north of the proposed site at its closest point and across Range Road 230.

Stormwater. Tree-/land-clearing activities and subsequent site-preparation to stabilize the surface soil, road improvements to access the property from range roads, and the construction of a perimeter fence would influence potential for sediment to be transported off-site during heavy Florida rainfall events. Eglin AFB averages around 65 inches of rainfall annually (U.S. Air Force, 2009). Construction permitting requires that activities must be more than 50 feet from surface water.

Because all construction activities with the potential to impact stormwater quality or disturb more than 1 acre of land, the construction activities must be permitted under the NPDES regulations as administered by the FDEP. The Air Force must obtain from the FDEP a Generic Permit for Stormwater Discharge for Large and Small Construction Activities prior to project initiation according to FAC Rule 62-346. Compliance with this permit involves developing and implementing an SWPPP during the construction phases of the Proposed Action.

An ERP would be required for land clearing for construction on greater than 1 acre that alters surface water flow. The ERP regulates the stormwater treatment and control once the construction of Proposed Action is complete and continues through the life of the site. The Air Force applies to FDEP through the NFWFMD, who handles federal agency permits, and would approve the design and build of any treatment/control.

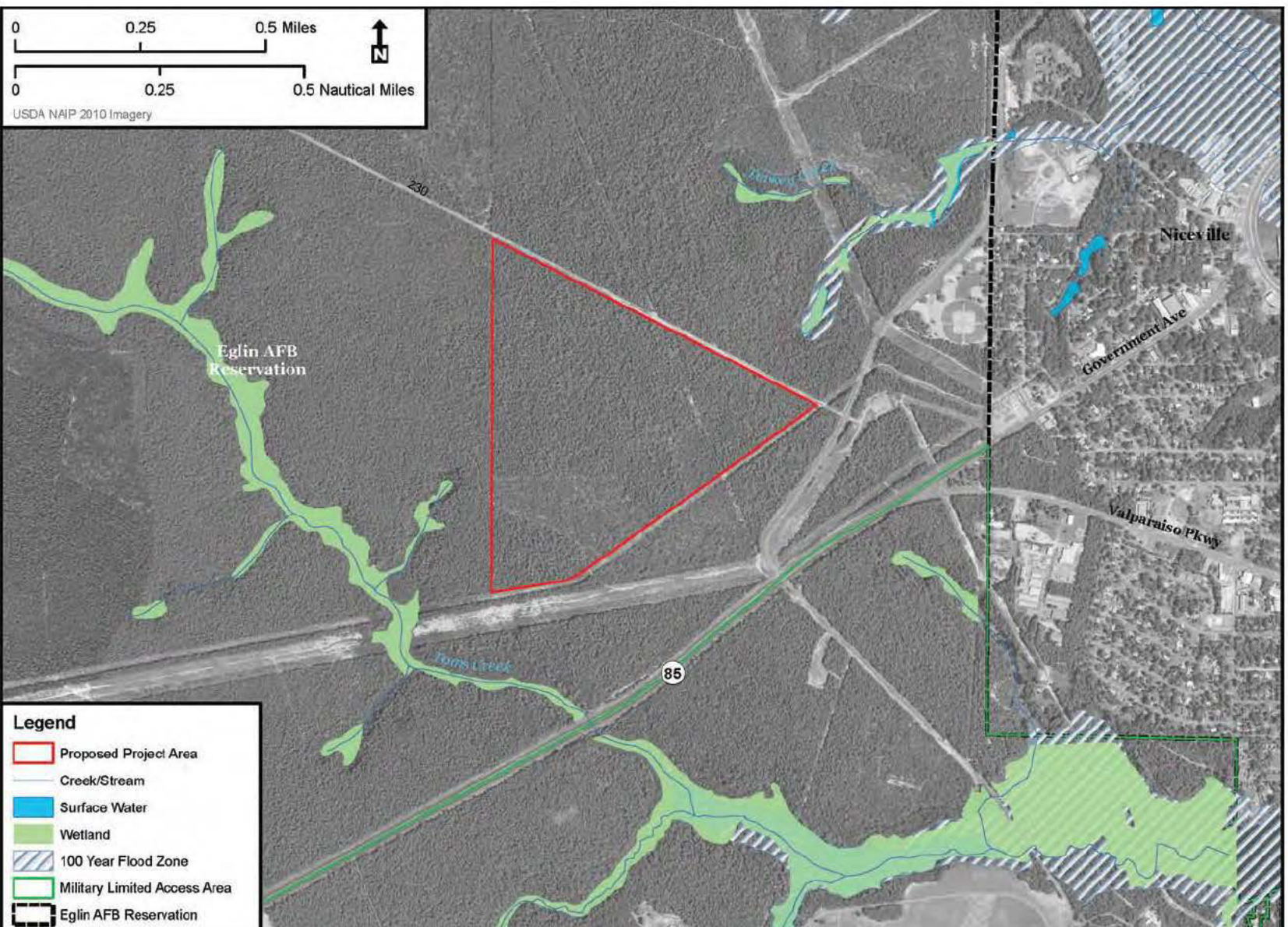


Figure 3-2. Water Resources in the Vicinity of the Proposed Site

Coastal zone. The Air Force (96th Civil Engineer Group/Environmental Assets [96 CEG/CEIEA] Natural Resources Office) submitted a CZMA negative determination under 15 Code of Federal Regulations (CFR) 930, to the state of Florida (which is the regulating authority for the CZMA) for the Proposed Action. The determination states that this activity would not have an effect on the Florida coastal zone concerning water resources, because the Eglin AFB management policies provides for the sustainable water management and the conservation of surface and ground waters for full beneficial use. The Florida State Clearinghouse received the Air Force's notice for the Proposed Action and did not object to the negative determination and agreed that the action meets the requirements of 15 CFR 930.35 (Appendix B, *CZMA Consistency Determination*).

3.3.2 Environmental Consequences

Proposed Action

The Air Force does not anticipate any impacts to groundwater. There are no plans to withdraw water (nonpotable or otherwise) for the Proposed Action. The ground disturbances for the Proposed Action activities are at the surface and not expected to impact groundwater in any way.

Under the Proposed Action, the potential for indirect impact of sediment transport from the proposed site to Tom's Creek and Turkey Creek would be minimal. Stormwater-carried sediment would not be expected to reach Tom's Creek as long as construction BMPs are implemented, as required by permitting, for erosion and stormwater control. As discussed in Section 3.2, the slightly sloping landscape and the nature of the highly absorbent soil would help alleviate the potential sedimentation to reach off-site surface water resources. The solar panel array would be sited near the center of property at the highest elevation from groundwater. The construction footprint for the array of solar panels on pedestals and its 150-foot buffer would include pervious materials, which would minimize stormwater velocity from the site by allowing more time to be absorbed by the soil.

Eglin AFB's Environmental Compliance (96 CEG/CEIEC) would coordinate all applicable permitting requirements, including NPDES and ERP permits, in accordance with the FAC. The Air Force would implement, as required by permit, a site-specific SWPPP and BMPs for stormwater management and minimize the potential for sediment transport by stormwater from the proposed site to Tom's Creek and Turkey Creek and their associated wetlands and floodplains. Therefore, no significant impacts to water resources are expected.

No Action Alternative

Under the No Action Alternative, the solar panel array would not be constructed nor the perimeter fence, and there would be no need to stabilize the soil for the construction footprint. There would be no need for tree clearing and construction activities, therefore, water resources would not be impacted water resources directly or indirectly.

3.4 BIOLOGICAL RESOURCES

3.4.1 Affected Environment

Definition of the Resource

Biological resources at the proposed and alternative sites include terrestrial plant and animal species, as well as the habitats that support these species. Sensitive species are those species protected under federal or state law and include migratory birds and threatened and endangered species. An *endangered* species is one that is in danger of extinction throughout all or a significant portion of its range. A *threatened* species is any species that is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

Analysis Methodology

Analysis evaluated the potential to negatively impact protected species located within the project area through direct impact (vehicle crushings, etc.) or habitat alteration. The first step in the analysis of potential impacts to biological resources was to determine the locations of sensitive habitats and species in relation to the Proposed Action. Maps were examined to locate sensitive species and habitats, and a site survey was conducted in June 2013 to look for the presence of undocumented sensitive species or habitats. The analyses included an assessment of the potential impacts on biological resources resulting from both construction activities and daily operations.

For biological resources, conclusions were drawn regarding the extent of impacts in which the level of anticipated impact is or is not likely to result in jeopardizing the continued existence of the species. Direct and indirect impacts to the species and its habitat are included in the analysis. The U.S. Fish and Wildlife Service considers any impact to be significant if potential impacts are anticipated and the action is likely to jeopardize the continued existence of the species.

Existing Conditions

The project site along Hwy 85 and south of Range Road 230 adjacent to the Valparaiso Substation is heavily wooded, consisting of mostly scattered pine and oak trees. There is also a cleared and maintained utility corridor running through the southern portion of the proposed site. The proposed site is generally characterized as the Sandhills ecological association (Figure 3-3). This habitat is characterized by open, savanna-like structure with a moderate-to-tall canopy of longleaf pine, a sparse mid-story of oaks and other hardwoods, and a diverse groundcover composed mainly of grasses, forbs, and low-stature shrubs. Native habitat has been modified by past activities, including clearing and maintenance of a utility corridor in the southern portion of the site. Soils consist of sandy sediments that appear to be fairly well drained. Tom's Creek, an Okaloosa darter stream, runs to the west of the project area, but well outside the footprint for construction and clearing. Tom's Creek also has associated wetland habitat.

A variety of mammals, reptiles, and other wildlife could utilize the site, although its location adjacent to developed areas decreases the overall habitat value. Due to its location in the Sandhills ecological association, the project area has potential to support the gopher tortoise (*Gopherus polyphemus*) and the eastern indigo snake (*Drymarchon couperi*), which are federally

listed as candidate and threatened species, respectively. Trees, large shrubs, and other vegetation at the site could provide habitat for birds, including migratory birds. Longleaf pine (*Pinus palustris*), which is used by the RCW (*Picoides borealis*), occurs at the site. The RCW is listed as endangered under the ESA.

During the recent survey, no species of concern were observed other than the gopher tortoise. Fourteen active gopher tortoise burrows and 10 inactive burrows were discovered (Figure 3-4). Because individual tortoises utilize multiple burrows, this number of active burrows is likely to support approximately 5 to 7 gopher tortoises. Four armadillo burrows were also found. Armadillo burrows may be utilized by eastern indigo snakes, though no evidence was observed. The area would be resurveyed and all gopher tortoises relocated to other portions of Eglin Reservation by Eglin Natural Resources Office prior to the commencement of any construction activities.

3.4.2 Environmental Consequences

Proposed Action

There would be no significant impacts to biological resources under the Proposed Action. Construction of the solar array would result in loss of a total of approximately 165 acres of habitat at the proposed site. Land clearing and daily operations may have a localized effect on native terrestrial wildlife species, such as squirrels, raccoons, rabbits, and deer. However, these species would either move to another location or remain within the area and utilize remaining foliage for habitat. In addition, the proposed area represents only a small percentage of the total land area that Eglin AFB maintains.

As mentioned above, gopher tortoises (*Gopherus polyphemus*) currently inhabit the area. This species is listed as threatened by the state of Florida and is a candidate species under the ESA. Gopher tortoises excavate burrows, which may in turn be used by other species such as the ESA-listed eastern indigo snake (*Drymarchon couperi*). However, all tortoises found during the site survey conducted in June 2013 would be relocated prior to beginning clearing. An additional survey would be conducted at least 30 days prior to the beginning of construction to ensure no tortoises have moved into the area. Additionally, burrows would be investigated to determine the presence of indigo snakes or other wildlife. Burrows would be collapsed after tortoise relocation to deter potential occupation by additional tortoises or other wildlife. The Air Force would further minimize the potential for negative impacts by advising all workers to halt activities if an indigo snake or gopher tortoise is sighted and allow it time to move to safety.

No Action Alternative

There would be no significant impacts to biological resources under the No Action Alternative. The solar array would not be constructed, the degree of human presence would not change, no habitat would be disturbed, and no trees would be removed. Wildlife use of the area would not change compared to current conditions.

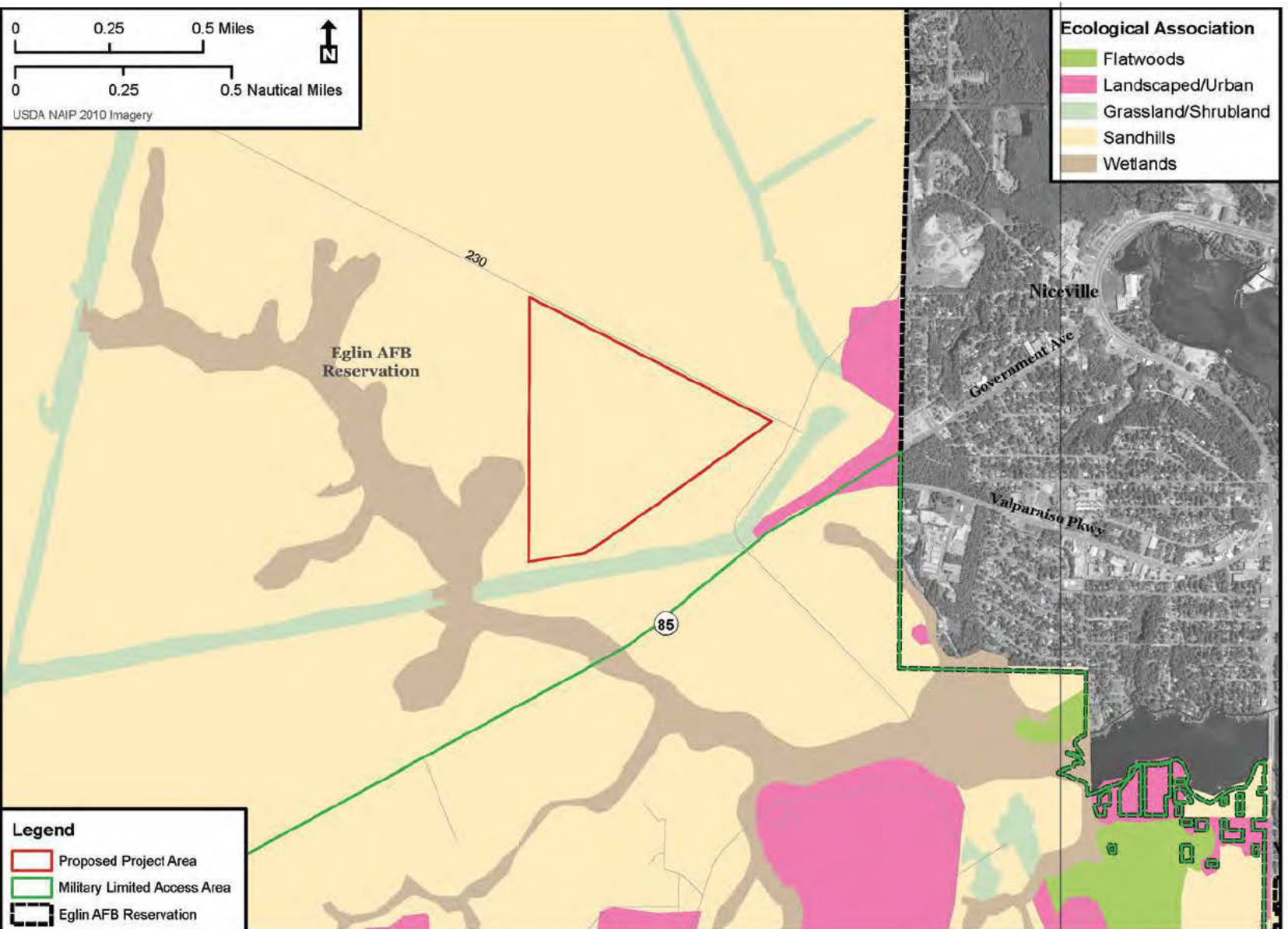


Figure 3-3. Ecological Associations

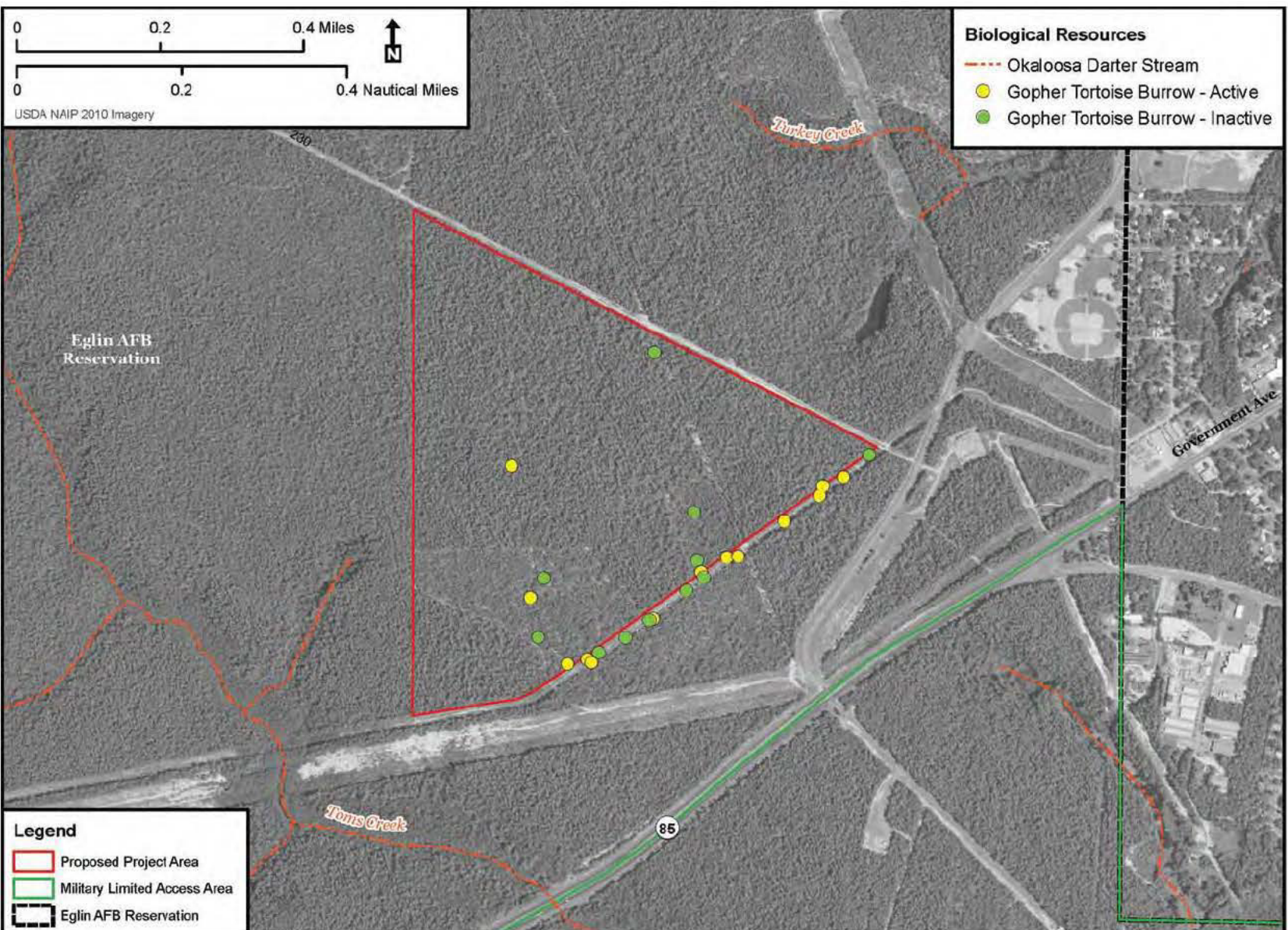


Figure 3-4. Biological Resources at the Project Site

3.5 AIR QUALITY

3.5.1 Affected Environment

Definition of the Resource

Air quality is determined by the type and amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions. The levels of pollutants are generally expressed on a concentration basis in units of parts per million (ppm) or micrograms per cubic meter ($\mu\text{g}/\text{m}^3$).

The baseline standards for pollutant concentrations are the National Ambient Air Quality Standards (NAAQS) and state air quality standards. These standards represent the maximum allowable atmospheric concentration that may occur and still protect public health and welfare (Table 3-1). Based on measured ambient air pollutant concentrations, the U.S. Environmental Protection Agency (USEPA) designates whether areas of the U.S. meet the NAAQS. Those areas demonstrating compliance with the NAAQS are considered “attainment” areas, while those areas not in compliance are known as “nonattainment.” Those areas that cannot be classified on the basis of available information for a particular pollutant are “unclassifiable” and are treated as attainment areas until proven otherwise.

Greenhouse Gas

Greenhouse gases are chemical compounds in the Earth’s atmosphere that trap heat. Gases exhibiting greenhouse properties come from both natural and man-made sources. Water vapor, carbon dioxide (CO_2), methane, and nitrous oxide are examples of greenhouse gases that have both natural and man-made sources, while other gases such as those used for aerosols are exclusively man-made. In the United States, greenhouse gas emissions come mostly from energy use. These are driven largely by economic growth, fuel used for electricity generation, and weather patterns affecting heating and cooling needs. Energy-related CO_2 emissions resulting principally from petroleum and natural gas represent over 80 percent of total U.S. man-made greenhouse gas emissions (U.S. Energy Information Administration, 2009).

Analysis Methodology

For this air quality analysis, the region of influence (ROI) is Okaloosa County. In the past, a combination of the Clean Air Act Prevention of Significant Deterioration Rule’s 250-ton-per-year threshold for new or modified stationary sources, and the General Conformity Rule’s regional significance threshold of 10 percent of the region’s emissions has often been used to indicate significance/nonsignificance for air quality impacts. However, the USEPA recently promulgated a revised General Conformity Rule that abolished the regional significance threshold for federal actions in nonattainment or maintenance areas (“Revisions to the General Conformity Regulations,” 75 *Federal Register* 17254, April 5, 2010). Given that change, as well as other considerations, a slightly different methodology is being used for this EA.

Table 3-1. National Ambient Air Quality Standards

Pollutant [final rule cite]		Primary/ Secondary	Averaging Time	Level	Form
Carbon monoxide [76 FR 54294, Aug. 31, 2011]		Primary	8-hour	9 ppm	Not to be exceeded more than once per year
			1-hour	35 ppm	
Lead [73 FR 66964, Nov. 12, 2008]		Primary and secondary	Rolling 3-month average	0.15 µg/m ³ ^a	Not to be exceeded
Nitrogen dioxide [75 FR 6474, Feb. 9, 2010] [61 FR 52852, Oct. 8, 1996]		Primary	1-hour	100 ppb	98th percentile, averaged over 3 years
		Primary and secondary	Annual	53 ppb ^b	Annual mean
Ozone [73 FR 16436, March 27, 2008]		Primary and secondary	8-hour	0.075 ppm ^c	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particle pollution [December 14, 2012]	PM _{2.5}	Primary	Annual	12 µg/m ³	Annual mean, averaged over 3 years
		Secondary	Annual	15 µg/m ³	Annual mean, averaged over 3 years
		Primary and secondary	24-hour	35 µg/m ³	98th percentile, averaged over 3 years
	PM ₁₀	Primary and secondary	24-hour	150 µg/m ³	Not to be exceeded more than once per year on average over 3 years
Sulfur dioxide [75 FR 35520, June 22, 2010] [38 FR 25678, Sept. 14, 1973]		Primary	1-hour	75 ppb ^d	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		Secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year

Source: USEPA, 2012

FR = Federal Register; PM_{2.5} = particulate matter with a diameter of less than or equal to 2.5 microns; PM₁₀ = particulate matter with a diameter of less than or equal to 10 microns; ppb = parts per billion; ppm = parts per million; µg/m³ = micrograms per cubic meter; USEPA = U.S. Environmental Protection Agency

a Final rule signed October 15, 2008. The 1978 lead standard (1.5 µg/m³ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

b The official level of the annual nitrogen dioxide standard is 0.053 ppm, equal to 53 ppb, which is shown here for the purpose of clearer comparison to the 1-hour standard.

c Final rule signed March 12, 2008. The 1997 ozone standard (0.08 ppm, annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years) and related implementation rules remain in place. In 1997, USEPA revoked the 1-hour ozone standard (0.12 ppm, not to be exceeded more than once per year) in all areas, although some areas have continued obligations under that standard ("anti-backsliding"). The 1-hour ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is less than or equal to 1.

d Final rule signed June 2, 2010. The 1971 annual and 24-hour sulfur dioxide standards were revoked in that same rulemaking. However, these standards remain in effect until one year after an area is designated for the 2010 standard, except in areas designated nonattainment for the 1971 standards, where the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standard are approved.

In order to evaluate air emissions and their impact on the ROI, the emissions associated with the project activities were compared with the total emissions on a pollutant-by-pollutant basis for the ROI's 2002 National Emissions Inventory (NEI) data. Potential impacts to air quality were evaluated with respect to the extent, context, and intensity of the impact in relation to relevant

regulations, guidelines, and scientific documentation. The CEQ defines significance in terms of context and intensity (40 CFR 1508.27). Thus, the significance of the action must be analyzed in respect to the setting of the Proposed Action and relative to the severity of the impact. The CEQ NEPA regulations (40 CFR 1508.27[b]) provide 10 key factors to consider in determining an impact's intensity.

To provide for a more conservative analysis, Okaloosa County was selected as the ROI instead of the USEPA-designated air quality control region, which is a much larger area. To identify impacts, calculated air emissions were compared with the annual total emissions of Okaloosa County as represented in the 2008 NEI. The air quality analysis focused on emissions associated with construction and demolition (C&D) activities.

The U.S. Air Force Air Conformity Applicability Model (ACAM) was used to determine if the different alternatives would constitute a significant impact for Okaloosa County emissions on an individual pollutant basis. The context and intensity of the emissions resulting under the Proposed Action were evaluated by comparing them with the total Okaloosa County emissions for each pollutant. Although a conformity determination is not required since Okaloosa County is designated "attainment," the ACAM provides a level of consistency with respect to emissions factors and calculations.

Existing Conditions

The FDEP currently operates one ozone monitor in Okaloosa County, located at 720 Lovejoy Road in Fort Walton Beach. This monitor began monitoring ozone levels on December 4, 2008, and began monitoring particulate matter with a diameter less than or equal to 10 microns on January 30, 2013 (FDEP, 2013). Okaloosa County is classified as an attainment area, as are all counties within Florida (other than Hillsborough County near Tampa) (USEPA, 2013).

An air emissions inventory describes the amount of emissions from a facility or within an area. Emissions inventories locate pollution sources, define the type and size of sources, characterize emissions from each source, and estimate total mass emissions generated over a period of time, normally a year. These annual rates are typically represented in tons per year. Inventory data establish relative contributions to air pollution concerns by classifying sources and determining the adequacy, as well as necessity, of air regulations. Accurate inventories are imperative for development of appropriate air quality regulatory policy. These inventories include stationary sources and encompass equipment/processes such as boilers, electric generators, surface coating, and fuel-handling operations. Mobile sources include motor vehicles, aerospace ground support equipment, and aircraft operations.

For comparison purposes, the USEPA's 2008 NEI data for Okaloosa County are presented in Table 3-2. The county data include emissions amounts from point sources (a stationary source that can be identified by name and location), non-point sources (a point source whose emissions are too small to track individually, such as a home or small office building, or a diffuse stationary source, such as wildfires or agricultural tilling), and mobile sources (any kind of vehicle or equipment with gasoline or diesel engine, airplane, or ship) (USEPA, 2008).

Table 3-2. Baseline Emissions Inventory for Okaloosa County

Source Type	Emissions (tons/year)					
	CO	NO _x	SO _x	VOCs	PM ₁₀	PM _{2.5}
Point, non-point, and mobile source emissions	66,216	8,164	297	46,912	9,335	3,338

Source: USEPA, 2008

CO = carbon monoxide; NO_x = nitrogen oxides; PM_{2.5} = particulate matter with a diameter of less than or equal to 2.5 microns; PM₁₀ = particulate matter with a diameter of less than or equal to 10 microns; SO_x = sulfur oxides; VOC = volatile organic compound

3.5.2 Environmental Consequences

This section discusses the potential impacts to air quality as a result of the No Action Alternative and the Proposed Action. Emissions associated with construction, including combustive emissions from heavy machinery, tools, and generators as well as worker trips would be the main contributors to air quality effects.

Proposed Action

The Proposed Action would include grading, structure construction, and paving of access roads. These operations would also include construction worker trips and stationary equipment (e.g., generators and saws), mobile equipment, and architectural coatings. Construction emissions are mainly related to fossil fuel combustion during use of machinery and fugitive dust emissions from ground disturbance and other physical disturbances.

As indicated in Table 3-3, the individual pollutant emissions from this action would not exceed 1 percent of the total Okaloosa County emissions for each corresponding pollutant. The pollutants with the highest percentages are volatile organic compounds (VOCs) and particulate matter with a diameter of less than or equal to 10 microns (PM₁₀), which are approximately 0.02 percent and 0.96 percent of Okaloosa County's total VOC and PM₁₀ emissions, respectively, based on the USEPA 2008 NEI. Therefore, there would be no major impacts to air quality associated with the Proposed Action.

Table 3-3. Proposed Action Emissions

Annual Emissions Source	Criteria Pollutant (tons per year)					
	CO	NO _x	SO ₂	VOCs	PM ₁₀	PM _{2.5}
Construction, renovation, and demolition	4.01	0.33	0	8.7	89.39	0.01
Okaloosa County (ROI)	66,216	8,164	297	46,912	9,335	3,338
Percent of ROI	0.01%	0.00%	0.00%	0.02%	0.96%	0.00%

CO = carbon monoxide; NO_x = nitrogen oxides; PM_{2.5} = particulate matter less than or equal to 10 microns in diameter; PM₁₀ = particulate matter less than or equal to 10 microns in diameter; ROI = region of influence; SO₂ = sulfur dioxide; VOC = volatile organic compound

The Proposed Action would include combustion of fossil fuels, which would lead to increased greenhouse gas emissions. However, the CEQ recommended that emissions equal to or greater than 25,000 metric tons annually should be included in NEPA assessments (CEQ, 2010). Project C&D emissions from fossil fuel combustion would not approach 25,000 metric tons. Thus, no major impacts to local or regional air quality would result from activities at Eglin AFB associated with implementation of the Proposed Action.

No Action Alternative

Under the No Action Alternative, the solar array would not be constructed. There would be no increased emissions and no impacts to the baseline emissions for the ROI under this alternative.

3.6 LAND USE

3.6.1 Affected Environment

Definition of the Resource

Land use generally refers to the management and use of land by people. The attributes of land use include general land use patterns, land ownership, land management plans, and special use areas. General land use patterns characterize the types of uses within a particular area. Specific uses of land typically include residential, commercial, industrial, agricultural, military, public/institutional, and recreational. Land use also includes areas set aside for preservation or protection of natural resources, wildlife habitat, vegetation, or unique features. Management plans, policies, ordinances, and regulations determine the types of uses that are allowable, or the types of uses that protect specially designated or environmentally sensitive uses.

Analysis Methodology

A *qualitative* method was used to assess potential land use impacts. On-base impacts are based on if the Proposed Action would result in a change to the existing land use, the degree to which the existing land use would be affected by the change, and if the change would be compatible with adjacent land uses and development.

Existing Conditions

As shown in Figure 3-5, current land uses for the proposed site include Tactical Training Area (K-6) and recreational use. The proposed site and adjacent areas are open to the public for hunting, when not in use for military training; the area south of the parcel is designated as an archery only area.

3.6.2 Environmental Consequences

Proposed Action

The proposed site is designated as Tactical Training Area K-6 and is also being used by the public for recreation, which Eglin AFB accommodates in select areas where and when it does not interfere with the military mission (U.S. Air Force, 2011). The Proposed Action would enable Eglin AFB to achieve its renewable energy generation goal, which in turn directly supports sustainment of the military mission. The Proposed Action would require permanent closure of the proposed site to the public, reducing the amount of recreational area available for hunting. In addition, the military maneuver area would be reduced but not significantly when compared with the entire Eglin land range. Although the area would be closed to the public and a small fraction of the maneuver area would be reduced, the sustainment of the overall military mission takes precedence. Therefore, no significant impacts to land use would occur.

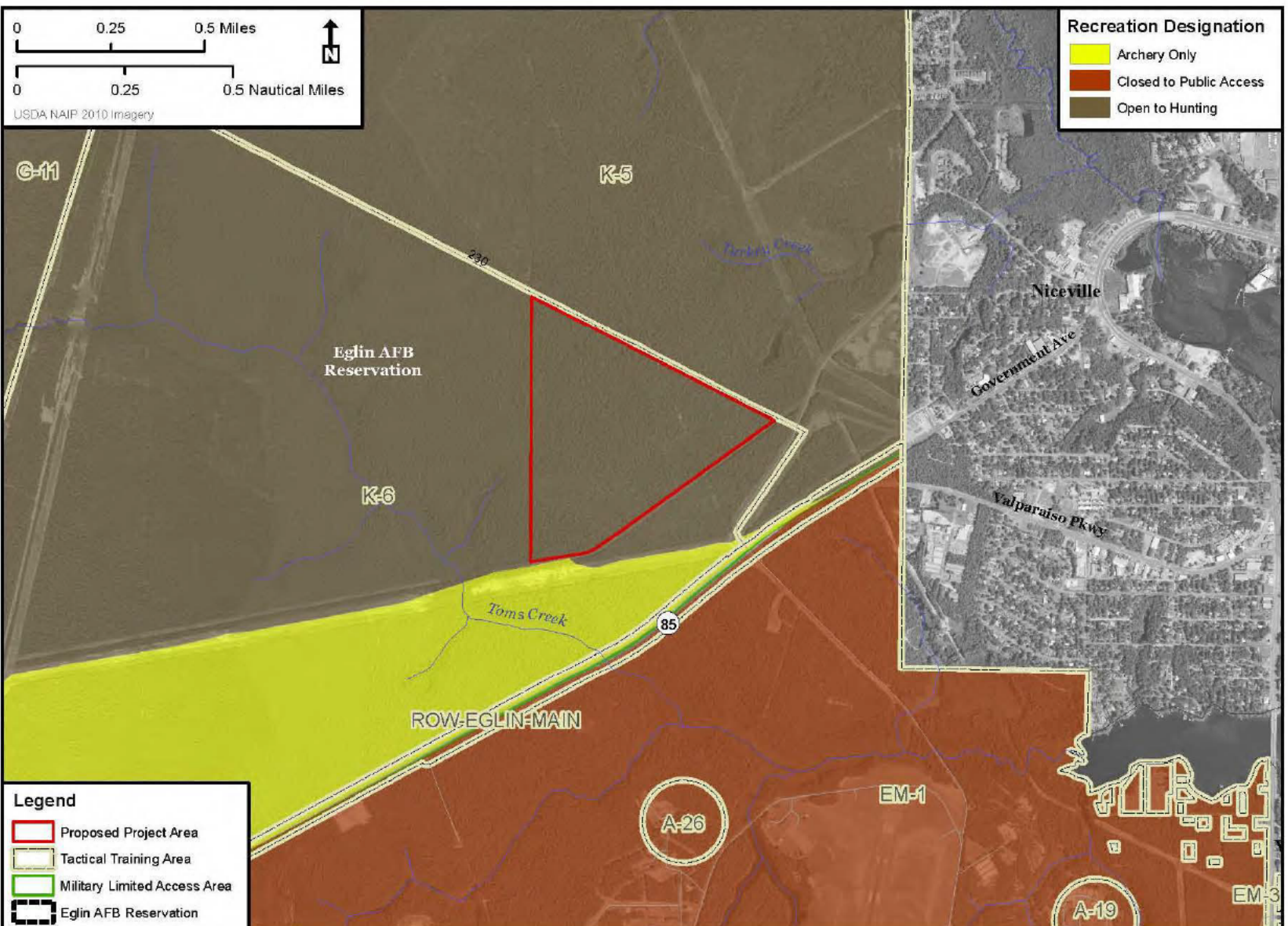


Figure 3-5. Land Use and Recreation Designation

No Action Alternative

There would be no significant impacts to land use under the No Action Alternative. The ROI would continue to be open to the public for recreational use, unless future military mission determines other use.

3.7 UTILITIES

This section presents information on infrastructure and utilities within the area potentially affected by the Proposed Action and No Action Alternative.

3.7.1 Affected Environment

Definition of the Resource

The utilities typically described in an EA include potable water, wastewater, electricity, and natural gas. This EA examines the potential impact of the solar PV array on the existing electrical system. Utilities such as water, gas, and wastewater management are not included in the analysis, as they would not be impacted by the Proposed Action.

Analysis Methodology

The context and intensity for construction and operation of the PV array was used to quantify potential consequences on electrical utilities. A comparison is made between the amount of the utility currently being used, regulatory limitations on consumption, and how implementation of the array would affect those factors.

Existing Conditions

Infrastructure refers to the system of public works, which provide the underlying framework for a community. During project and site planning, engineers consider the utility specifications required as part of the project. Potential modifications and upgrades to existing systems factor into the planning process. The existing conditions of the electrical utility focuses on the existing infrastructure, current utility use, and any pre-defined capacity or limitations as set forth in permits or regulations. There are no specific regulations associated with electrical infrastructure or supply.

Electricity usage on Eglin AFB has been steady from fiscal year (FY) 2000 through FY 2012 (Table 3-4). The electrical infrastructure on Eglin Main Base is extensive; however, no infrastructure is located within the proposed site. Natural gas and electrical infrastructure are present immediately adjacent to the proposed site (Figure 3-6). Gulf Power supplies transmission voltage electricity to Eglin Main Base via a primary meter. Two substations on Eglin track usage, regulate flow, and distribute electricity to Eglin Main Base, Duke Field, and portions of the Eglin Range (U.S. Air Force, 2013).

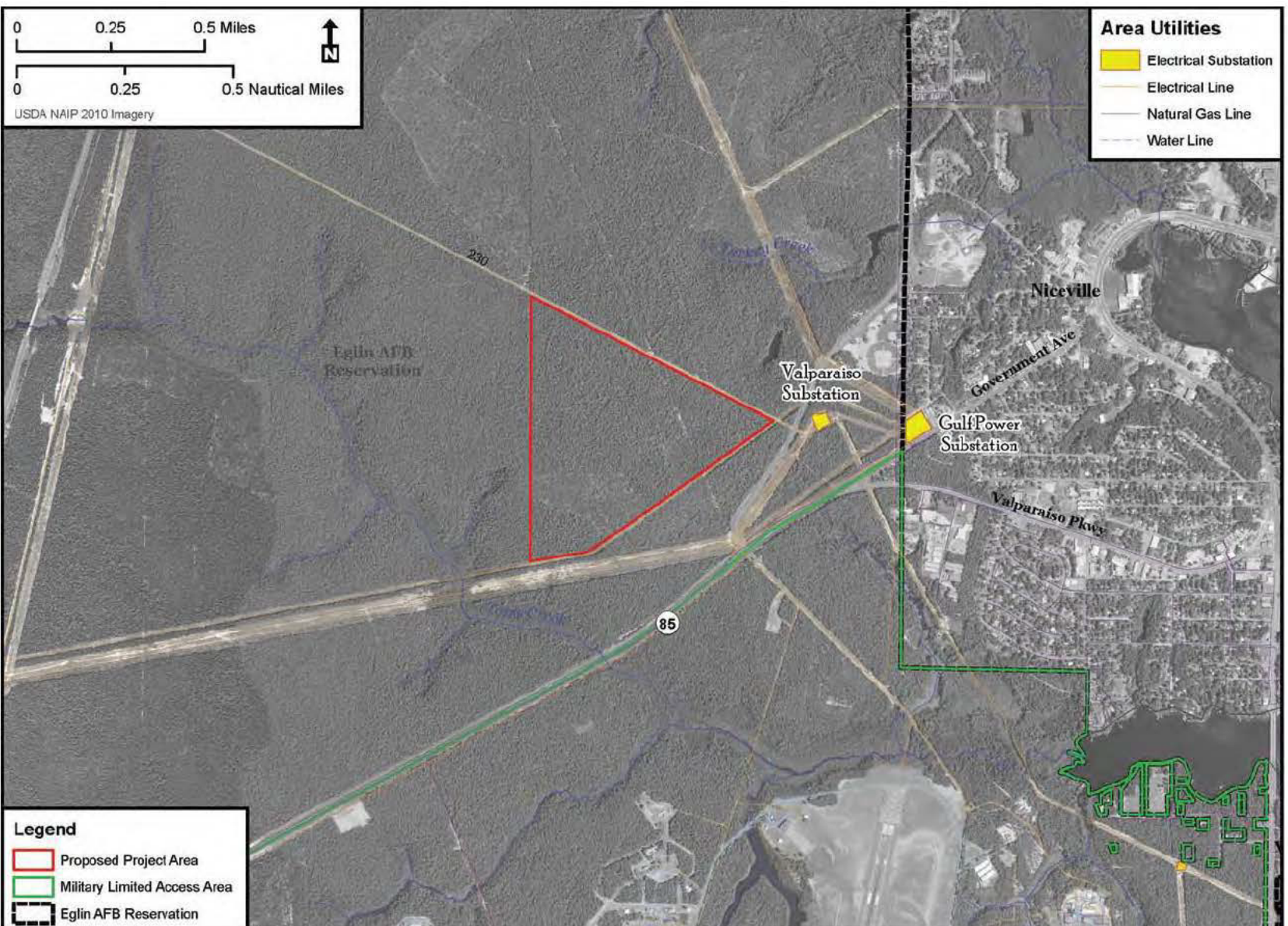


Figure 3-6. Utilities in the Vicinity of the Proposed Site

Table 3-4. Electricity Consumption from 2000 to 2012 for Eglin AFB

Fiscal Year	Total Electricity Consumption (kWh)¹
2000	265,650,513
2001	252,823,920
2002	271,832,920
2003	263,271,716
2004	261,955,624
2005	278,051,532
2006	269,711,844
2007	265,633,477
2008	245,647,000
2009	245,647,000
2010	245,573,596
2011	232,001,258
2012	234,780,647

Source: U.S. Air Force, 2013; Reese, 2013

AFB = Air Force Base; kWh = kilowatt hours

¹ Electricity consumption data include Eglin Main Base, Duke Field, and the Eglin Range.

3.7.2 Environmental Consequences

Proposed Action

The Proposed Action would have beneficial impacts to utilities usage on Eglin AFB with the additional energy generation created from the solar PV array. There would be no significant impacts to utilities during construction and installation. The 16.9-MW PV array would be connected to the current electrical grid system on Eglin AFB through the existing Valparaiso Substation. It is expected that, when operational, Eglin would generate approximately 30,000 MWh or 7.5 percent of the electricity currently used on Eglin AFB, reducing the annual consumption of electricity from outside sources. All of the generated electricity would be utilized solely by Eglin AFB.

The proponent would coordinate with all utility providers prior to any ground-disturbing activities to avoid damage to existing electrical and natural gas-related buried utilities. Construction activities would be conducted in such a way as to identify and avoid potential disruptions in other utility services. Utilities in the vicinity of the project area have been sited and would be clearly marked during construction activities.

No Action Alternative

There would be no significant impacts to existing utilities under the No Action Alternative, as the construction of the solar PV array would not take place. Benefits from the potential alternative energy created would not be realized under the No Action Alternative. In addition, Eglin AFB would not meet its goal of obtaining 7.5 percent of its energy usage from alternative sources by 2015.

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4. CUMULATIVE IMPACTS

Cumulative impacts to environmental resources result from incremental effects of proposed actions when combined with other past, present, and reasonably foreseeable future projects in the ROI. Cumulative impacts can result from individually minor but collectively substantial actions undertaken over a period of time by various agencies (federal, state, and local) or individuals. In accordance with NEPA, a discussion of cumulative impacts resulting from projects that are proposed, or anticipated over the foreseeable future, is required.

4.1 PAST, PRESENT, AND REASONABLY FORESEEABLE ACTIONS IN THE ROI

This section discusses the potential for cumulative impacts caused by implementation of the Proposed Action when combined with other past, present, and reasonably foreseeable actions occurring in the ROI. The ROI is defined as Eglin Main Base.

4.1.1 Past and Present Actions

The Air Force has not identified any other past or present actions that are relevant to the current Proposed Action. Other future actions planned include implementation of the Base Realignment and Closure (BRAC) decision made in 2005 for Eglin AFB and the Eglin/Hurlburt Housing Privatization Initiative.

4.1.2 Reasonably Foreseeable Future Actions

A ROD was signed in February 2009 for the 2005 BRAC decision to establish the Joint Strike Fighter (JSF) Initial Joint Training Site at Eglin AFB for joint Air Force, Navy, and Marine Corps JSF training organizations to teach aviators and maintenance technicians how to properly operate and maintain this new weapons system. A Supplemental Environmental Impact Statement is currently under way to analyze options for new runways or reconfiguring existing Eglin runways to accommodate additional aircraft. As part of the 2005 BRAC decision approximately 4,000 additional military, civilian, and contractor personnel (not including family members) would relocate to Eglin AFB. Potential impacts from these programs due to changing mission and additional personnel may include noise, air quality, munitions storage concerns, transportation, and utilities concerns, among others.

Due to the BRAC decision, the Air Force needed to conduct a new housing requirements analysis in light of the changes in personnel. Thus, the Air Force intends to privatize its housing at Eglin AFB and Hurlburt Field under a statutory program to allow it to meet its military housing requirement. This is referred to as the Military Housing Privatization Initiative, or MPH. At completion of the project, a developer would own and operate 1,477 housing units on behalf of Eglin AFB and Hurlburt Field.

Due to the importance of Eglin AFB, it is anticipated that the area will undergo many future construction and renovation projects over the next 5 years. Similar to other construction projects, any potential future projects would most likely result in impacts to land use, air quality, noise, traffic and transportation, water resources, local utilities, and hazardous materials.

Potentially replacing older buildings and facilities with newer buildings and technologies would provide an overall benefit due to an increase in energy efficiency. Implementation of BMPs as required under construction and associated permits would minimize impacts to soils, stormwater, surface water, and air quality. Overall, the cumulative impacts from the projects described above are not anticipated to be significant.

4.2 CUMULATIVE IMPACTS

Soils

Past development in various locations of Eglin AFB have likely contributed to erosion and soil loss. However, the extent to which this has occurred is difficult to determine. Implementation of the Proposed Action would involve the utilization of erosion control measures to minimize the potential for erosion to adversely impact adjacent wetland areas and water quality. Eglin AFB has not identified, in available analyses of foreseeable future actions, any adverse impacts on soils and erosion. As a result, implementation of the Proposed Action and/or foreseeable future actions would not likely contribute in any appreciable manner to erosion that has occurred in the past.

Water Resources

Increases in stormwater runoff have the potential to decrease water quality. However, site design plans, safety plans, and permits for new development would address potential issues involving water quality degradation and help to protect water resources on Eglin AFB. Eglin AFB does not expect that the nature of this project would place additional, cumulative demands on water quality or quantity. Eglin AFB has not identified, in available analyses of foreseeable future actions, any adverse impacts on water resources or water quality. As a result, Eglin AFB does not expect any cumulative impacts associated with water quality to occur.

Biological Resources

Localized loss of habitat, degradation of habitat, noise impacts, or direct physical impacts to species can have a cumulative impact when viewed on a regional scale if that loss or impact is compounded by other events with the same end results. Analysis of potential impacts has identified minimal potential for significant impacts to biological resources, which includes vegetation, wildlife, and threatened and endangered species and their habitat, provided Eglin AFB implements management actions and BMPs.

Air Quality

Air quality would be temporarily impacted by construction activities occurring concurrently. The emissions from construction are expected to be minimal and would have little overall effect on regional air quality. Thus, no significant impacts to the region's air quality are expected.

Utilities

No cumulative impacts have been identified for utilities. No new activities are planned that would contribute to cumulative impacts to utilities. As the overall use of electricity is projected to be less than current capacity, it is not expected that the relevant reasonably foreseeable actions would have a cumulative impact. The Proposed Action should result in beneficial impacts at Eglin AFB related to net energy production. The cumulative energy usage would decrease and remain well within the existing utility infrastructure capacity.

4.3 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

NEPA requires that EAs include identification of any irreversible and irretrievable commitment of resources that would be involved in the implementation of the Proposed Action. Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that the uses of these resources have on future generations. Irreversible effects primarily result from the use or destruction of a specific resource (e.g., energy and minerals) that cannot be replaced within a reasonable time frame. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the Proposed Action (e.g., extinction of a threatened or endangered species or the disturbance of a cultural site).

Environmental consequences as a result of this project are considered short term and temporary. Construction activities would require consumption of limited amounts of materials typically associated with construction (e.g., concrete, gravel). The Air Force does not expect the amount of these materials used to significantly decrease the availability of the resources. Small amounts of nonrenewable resources would be used; however, the Air Force does not consider these amounts to be appreciable and does not expect them to affect the availability of these resources.

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5. MANAGEMENT PRACTICES

The following is a list of regulations, plans, permits, and management actions associated with the Proposed Action as described in Section 1.2. The environmental impact analysis process for this EA identified the need for these requirements, and the proponent and interested parties involved in the Proposed Action cooperated to develop them. These requirements are, therefore, to be considered as part of the Proposed Action and would be implemented through the Proposed Action's initiation. The proponent is responsible for adherence to and coordination with the listed entities to complete the plans, permits, and management actions.

5.1 REGULATIONS, PLANS, AND PERMITS

- CZMA Consistency Determination (Appendix B, *CZMA Consistency Determination*)
- SWPPP
- FDEP NPDES Permit
- ERP

5.2 MANAGEMENT ACTIONS

The proponent would be responsible for implementation of the following management actions.

5.2.1 Soils

- Describe slopes, drainage patterns, areas of soil disturbance, areas where stabilization practices would occur, water locations, and storm discharge locations.
- Describe erosion and sediment controls, BMPs, and construction site measures (e.g., implementing mitigation measures such as vegetating barren slopes more than 15 percent, using hay bales and silt fences to reduce surface runoff into local waterways).
- Outline stabilization and structural plans to permanently stabilize soils and divert water off-site and manage stormwater.
- Provide control for potential pollutants, use approved state and local plans, and prevent nonstormwater discharges.
- Provide for maintenance and inspection of all designed systems.
- Sequence construction activities to limit the soil exposure for long periods of time.

5.2.2 Water Resources

- Do not alter natural flow patterns of streams by diverting water, causing siltation, or damming any portion of the stream or its tributaries.
- Vehicles and equipment must stay a minimum of 50 meters (164 feet) from the edge of slopes leading down to streams.
- For permitted off-road vehicle use, do not drive vehicles in or across streams except at designated crossing points.
- Tree clearing of any species is not permitted unless approved by Eglin Natural Resources Office.
- Install and maintain entrenched silt fencing and hay bales along the perimeter of the construction site prior to any ground-disturbing activities and maintain them in effective, operating condition prior to, during, and throughout the entire construction process to prevent fill material, pollutants, and runoff from entering wetlands or other surface waters.
- Maintain at least a 100-foot vegetated buffer between construction sites and surface waters.
- Incorporate a monitoring plan, especially after rain events, to observe the effectiveness of silt fencing, hay bales, and/or other erosion and sedimentation control devices and address modification as needed. Any failures would be carefully examined and corrected to prevent reoccurrence.
- Replant cleared and disturbed areas with native vegetation and grasses or mulch when the final grade is established to reduce/prevent erosion. Note: For this action, gravel was proposed for the ground cover under the solar array and a 150-foot buffer to prevent potential fire hazard to solar panel array.
- Where applicable, reduce erosion using rough grade slopes or terrace slopes.
- Identify areas of existing vegetation that the proponent would retain and not disturb by construction activities.
- Any repairs, maintenance, and use of construction equipment (e.g., cement mixers) would take place in designated “staging areas” designed to contain any chemicals, solvents, or toxins from entering the affected environment.
- Stabilize construction site entrance using Florida Department of Transportation-approved stone and geotextile (fiber fabric).
- Equip all work sites with adequate waste disposal receptacles for liquid, solid, and hazardous wastes to prevent C&D debris from leaving the work site.
- Utilize proper site planning, low-impact design principles, and adequately engineered stormwater retention ponds (or swales) to manage stormwater (on-site) and prevent discharges into nearby surface waters. The design would take into consideration the landscape of the area and physical features to determine whether a retention pond or

series of swales would be used to contain runoff. In accordance with FDEP regulations, a Florida-registered professional engineer would design the proposed retention feature.

- Design open channels and outfall ditches to include plans so that they do not overflow their banks.
- Where flow volumes exceed 2 cubic feet per second, provide ditch pavement or other permanent protection against scouring. Revegetate unprotected ditches with permanent material to provide an erosion resistant embankment.
- Provide all construction personnel with proper training regarding all management techniques.

5.2.3 Biological Resources

- Facility location(s) and orientation(s) would be designed to minimize the loss of trees, particularly longleaf pines.
- A gopher tortoise survey is required before construction activities begin. Any tortoises found would be relocated. Any burrows on the project site would be investigated for the presence of eastern indigo snake. Burrows would be collapsed after investigation and relocation, if applicable, to deter subsequent occupation by additional gopher tortoises or other wildlife.

5.2.4 Air Quality

- Construction activities would employ standard management measures, such as watering of graded areas, covering soil stockpiles, and contour grading (if necessary), to minimize temporary generation of dust and particulate matter.
- Diesel-powered highway and nonroad vehicles and engines used in construction would limit idling time to 3 minutes, except as necessary for safety, security, or to prevent damage to property; and such exhausts would be located the maximum feasible distance from any building fresh air intake vents.

5.2.5 Utilities

- Coordination with all utility providers would be required prior to any ground-disturbing activities in an effort to minimize potential conflicts between utility providers.

5.2.6 Cultural Resources

- No known cultural resources are located in the vicinity of the project area. However, in the event that additional archaeological resources are inadvertently discovered during construction, 96th Civil Engineer Group/Cultural Resources Office would be notified immediately and further ground-disturbing activities would cease in that area. Identified resources would be managed in compliance with federal law and Air Force regulations.

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6. LIST OF PREPARERS AND CONTRIBUTORS

Name/Title	Project Role	Subject Area	Experience
<i>Boykin, Brad</i> Environmental Scientist B.S., Biomedical Science M.B.T., Biotechnology	Author	Air Quality, Biological Resources	8 years, biotechnology and chemistry
<i>Brecken, Jeri</i> Environmental Scientist B.S., Wildlife Ecology M.S., Biology	Author	Soils, Water Resources	23 years, aquatic toxicology (NPDES, TSCA, CERCLA), water quality analysis
<i>Jordan, Teresa A.</i> Physical Scientist, GS-12 (Air Force) B.S., Biology	NEPA Program Manager and DOPAA Development		16 years, environmental science, air quality, water quality, and energy
<i>Koralewski, Jason</i> Archaeologist M.A., Anthropology M. Liberal Studies, Archaeology B.A., Anthropology	Author	Utilities	17 years, environmental science
<i>McLaurine, Henry</i> Environmental Scientist M.S., Biology B.S., Environmental Science	Project Manager and DOPAA Development		18 years, environmental science, air quality
<i>Nation, Mike</i> Environmental Scientist B.S., Environmental Science/Policy, Minor in Geography A.A., General Science	GIS Analyst		13 years, environmental consultant, interagency coordination, GIS Arc View applications
<i>Sands, Amy</i> Environmental Scientist B.S., Environmental Science M.A.S., Environmental Policy and Management	Technical Lead and DOPAA Development		8 years, environmental science and GIS mapping
<i>Stepp, Heather</i> Environmental Scientist B.S., Environmental Engineering Technology	Author	Land Use	17 years, environmental science

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7. REFERENCES

- Council on Environmental Quality (CEQ), 2010. National Environmental Policy Act Regulations, Top 40 Frequently Asked Questions. Available on the Internet at <http://ceq.hss.doe.gov/nepa/regs/40/1-10.HTM#1>. Last viewed in May 2010.
- Florida Department of Environmental Protection (FDEP), 2013. Okaloosa County 2013 Air Monitor Site. Accessed online at <http://appprod.dep.state.fl.us/air/flaqs/SiteDetail.asp?SiteID=120910002&RequestYear=2013>, June 25, 2013.
- Mitsch, W. J., and J. G. Gosselink, 2000. *Wetlands*, 3rd Edition. New York: John Wiley & Sons.
- Northwest Florida Water Management District (NFWFMD), 2008. 2008 Water Supply Assessment Update. Water Resource Assessment 08-02. December.
- Overing, J. D., H. H. Weeks, J. P. Wilson, Jr., J. Sullivan, and R. D. Ford, 1995. *Soil Survey of Okaloosa County, Florida*. USDA, Natural Resources, Soil Conservation Service.
- Rainer, M. 2013. Personal communication between Mike Rainer, soils scientist (SAIC), and Jeri Brecken (SAIC), June 13.
- Reese, J., 2013. E-mail communication with James Reese (96 CEG/CEAO) with Jason Koralewski regarding Electricity usage data on June 26, 2013.
- U.S. Air Force, 2009. *Final Erosion Control Component Plan*. Prepared by SAIC for Natural Resources Management, Eglin Air Force Base, Florida. April.
- U.S. Air Force, 2010a. *Air Force Energy Plan 2010*. Assistant Secretary of the Air Force for Installations, Environment and Logistics (SAF/IE). Director of the Headquarters Air Force (HAF) Energy Program Management Office. www.safie.hq.af.mil.
- U.S. Air Force, 2010b. *Air Force Infrastructure Energy Plan 2010*. The Deputy Chief of Staff, Logistics, Installations and Mission Support (AF/A4/7). www.safie.hq.af.mil.
- U.S. Air Force, 2011. *Comprehensive Range Plan, Land Use Plan*. Eglin Air Force Base, Florida. June.
- U.S. Air Force, 2012. 96th Test Wing Fact Sheet. Retrieved from <http://www.eglin.af.mil/library/factsheets/factsheet.asp?id=19651> on May 16, 2013.
- U.S. Air Force, 2013. *Supplemental Environmental Impact Statement for the F-35 Beddown at Eglin Air Force Base, Florida*. Draft.
- U.S. Army Corps of Engineers (USACE), 1987. *Wetlands Delineation Manual*. Technical Report Y-87-1.
- U.S. Energy Information Administration, 2009. "Emissions of Greenhouse Gases Report." Produced by the National Energy Information Center, Energy Information Administration. Available on the Internet at <http://www.eia.gov/oiaf/1605/ggrpt/carbon.html#total>. Accessed on September 30, 2011.
- U.S. Environmental Protection Agency (USEPA), 2008. National Emissions Inventory 2008, Version 3. Retrieved from <http://www.epa.gov/ttn/chief/net/2008inventory.html> on June 25, 2013.
- U.S. Environmental Protection Agency (USEPA), 2012. National Ambient Air Quality Standards (NAAQS). Accessed online at <http://www.epa.gov/air/criteria.html>. Updated December 14, 2012.

References

- U.S. Environmental Protection Agency (USEPA), 2013. Currently Designated Nonattainment Areas for All Criteria Pollutants. Accessed online at <http://www.epa.gov/air/oaqps/greenbk/anc13.html>. Updated February 7, 2013.
- U.S. Geological Survey, 2010. Water Science Glossary of Terms. <http://ga.water.usgs.gov/edu/dictionary.htm>. Page last modified April 1, 2010.

APPENDIX A
CULTURAL RESOURCES

CULTURAL RESOURCES



FLORIDA DEPARTMENT of STATE

RICK SCOTT
Governor

KEN DETZNER
Secretary of State

Ms. Maria Rodriguez
Chief, Environmental Branch
96 CEG/CEVH
501 De Leon Street, Suite 101
Eglin AFB, Florida 32542-5105

April 16, 2013

Re: DHR Project File No.: 2013-01198 / Received by DHR: March 26, 2013
*Cultural Resources Survey of X-1184 (Task Order CR-12-0038), Contract W912DY-09-2-0037,
Cultural Resources Management Support, Eglin Air Force Base, Okaloosa County, Florida*

Dear Ms. Rodriguez:

Our office received and reviewed the above referenced survey report in accordance with Sections 106 and 110 of the *National Historic Preservation Act of 1966* (Public Law 89-665), as amended in 1992, and 36 C.F.R., Part 800: *Protection of Historic Properties*, and Chapter 267, *Florida Statutes*, for assessment of possible adverse impact to cultural resources (any prehistoric or historic district, site, building, structure, or object) listed, or eligible for listing, in the National Register of Historic Places (NRHP).

Between October and November 2012, Prentice Thomas and Associates, Inc. (PTA) conducted an archaeological and historical Phase I survey of survey unit X-1184 on behalf of Three Rivers Resource Conservation and the US Air Force. PTA identified two previously unrecorded archaeological sites (8OK2921 and 8OK2949) and two archaeological occurrences within the survey unit during the investigation.

PTA determined that the twentieth century refuse sites (8OK2921 and 8OK2949) lack research potential or historical significance and are not eligible for listing in the NRHP.

Based on the information provided, our office concurs with the determinations of the US Air Force and finds the submitted report to be complete and sufficient in accordance with Chapter 1A-46, *Florida Administrative Code*.

For any questions concerning our comments, please contact Rudy Westerman, Historic Preservationist, by electronic mail at Rudy.Westerman@DOS.MyFlorida.com, or by phone at 850.245.6333. We appreciate your continued interest in protecting Florida's historic properties.

Sincerely,

Timothy A. Parsons, DSHPO for

Robert F. Bendus, Director
Division of Historical Resources
and State Historic Preservation Officer



DIVISION OF HISTORICAL RESOURCES
R. A. Gray Building • 500 South Bronough Street • Tallahassee, Florida 32399-0250
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Commemorating 500 years of Florida history • www.fla500.com





DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 96TH TEST WING (AFMC)
EGLIN AIR FORCE BASE FLORIDA

18 MAR 2013

Maria D. Rodriguez
Chief, Environmental Stewardship Branch
96 CEG/CEVS
501 Deleon Street, Suite 101
Eglin AFB FL 32542-5105

Robert F. Bendus, Director
Division of Historical Resources
R.A. Gray Building
500 South Bronough Street
Tallahassee FL 32399-0250

Dear Mr. Bendus

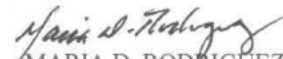
Enclosed with this letter is a copy of the report *Cultural Resources Survey of X-1184, (CR-12-0038) Cultural Resources Management Support, Eglin Air Force Base, Okaloosa County, Florida* produced by Prentice Thomas and Associates, Inc., along with supplemental documentation. The fieldwork was performed in accordance with procedures and methods described in the *Historic Preservation Compliance Review Program* (1990).

Two new sites (8OK2949 & 8OK2921) and two archaeological occurrences were identified during the current effort. Both sites were determined to be ineligible for nomination to the *National Register of Historic Places (NRHP)*. Archaeological occurrences are categorically ineligible for *NRHP* nomination, therefore, no further work is recommended. Eglin concurs with the findings of the investigation.

With this letter Eglin is notifying you, as required by Section 106 of the NHPA, that it has located all cultural resources within the area of investigation. If your office does not respond within 30 days, it is assumed you concur with the determinations and recommendations in the report.

Eglin is again pleased to work with you in protecting the cultural resources of the Base and the state of Florida. Should you have any questions regarding the report please contact my representative, Lynn Shreve at 850-883-5201.

Sincerely


MARIA D. RODRIGUEZ, GS-14
Chief, Environmental Stewardship Branch

Attachments listed on following page.

8. Attachments:

1. Report
2. Document Checklist
3. Survey Log Sheet
4. SmartForm CD
5. GIS Files CD
6. Large-scale Plot Map
7. Table of Concordance
8. Two Site Forms

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APPENDIX B

COASTAL ZONE MANAGEMENT ACT CONSISTENCY DETERMINATION

COASTAL ZONE MANAGEMENT ACT CONSISTENCY DETERMINATION

FEDERAL AGENCY COASTAL ZONE MANAGEMENT ACT (CZMA) NEGATIVE DETERMINATION

Introduction

This document provides the State of Florida with the U.S. Air Force's Negative Determination under Section 307 of the Coastal Zone Management Act (CZMA), 16 U.S.C. § 1456, and 15 C.F.R. Part 930.35. The information in this Negative Determination is provided pursuant to 15 C.F.R. Section 930.35.

This negative determination addresses the Proposed Action for the installation of a solar photovoltaic (PV) system on Eglin Air Force Base (AFB), Florida (Figure 1).

Proposed Federal agency action:

The solar PV system is a 16.9 megawatt (MW) single-axis tracking system with monocrystalline solar modules. The size and design of the system maximize cost efficiencies of the life-cycle cost of the system and directly parallel peak load usage of the reservation. The PV system will be installed on Eglin AFB property and connected to an Eglin AFB-owned substation (Valparaiso) that is within a few hundred yards of the proposed project site (Figure 2). The proposed site is 155 acres in size and has no current mission uses; the PV system would require approximately 40 to 90 acres of the site depending on final design plans (Figure 3). The PV system uses a string-level inverter, which enhances monitoring capabilities, limits the amount of system downtime, and reduces costs on potential system repairs. A web-based monitoring system is included in the system design and can be accessed from on-base computers. The use of a continuous monitoring system allows for a rapid response time for any system adjustments and is the most cost effective approach for long term maintenance of the system. Eglin AFB is committed to meeting federal and US Air Force renewable energy goals. This proposed 16.9 MW solar PV project would achieve on-base generation at 7.7% of total consumption, exceeding the US Air Force renewable energy goal of 7.5%.

Federal Review

After review of the Florida Coastal Management Program and its enforceable policies, the U.S. Air Force has made a determination that this activity would not have an effect on the state of Florida coastal zone or its resources.

Florida Coastal Management Program Consistency Review

Statute	Consistency	Scope
Chapter 161 <i>Beach and Shore Preservation</i>	The Proposed Action would not affect beach and shore management, specifically as it pertains to: <ul style="list-style-type: none"> • The Coastal Construction Permit Program. • The Coastal Construction Control Line (CCCL) Permit Program. • The Coastal Zone Protection Program. All activities would occur on federal property.	This statute provides policy for the regulation of construction, reconstruction, and other physical activities related to the beaches and shores of the state. Additionally, this statute requires the restoration and maintenance of critically eroding beaches.
Chapter 163, Part II <i>Growth Policy; County and Municipal Planning; Land Development Regulation</i>	The Proposed Action would not affect local government comprehensive plans.	Requires local governments to prepare, adopt, and implement comprehensive plans that encourage the most appropriate use of land and natural resources in a manner consistent with the public interest.
Chapter 186 <i>State and Regional Planning</i>	The Proposed Action would not affect state plans for water use, land development, or transportation.	Details state-level planning requirements. Requires the development of special statewide plans governing water use, land development, and transportation.
Chapter 252 <i>Emergency Management</i>	The Proposed Action would not affect the state's vulnerability to natural disasters. The Proposed Action would not affect emergency response and evacuation procedures.	Provides for planning and implementation of the state's response to, efforts to recover from, and the mitigation of natural and manmade disasters.
Chapter 253 <i>State Lands</i>	All activities would occur on federal property; therefore the Proposed Action would not affect state lands.	Addresses the state's administration of public lands and property of this state and provides direction regarding the acquisition, disposal, and management of all state lands.
Chapter 258 <i>State Parks and Preserves</i>	The Proposed Action would not affect state parks, recreational areas and aquatic preserves.	Addresses administration and management of state parks and preserves.
Chapter 259 <i>Land Acquisition for Conservation or Recreation</i>	The Proposed Action would not affect tourism and/or outdoor recreation.	Authorizes acquisition of environmentally endangered lands and outdoor recreation lands.
Chapter 260 <i>Florida Greenways and Trails Act</i>	The Proposed Action would not affect the Greenways and Trails Program.	Established in order to conserve, develop, and use the natural resources of Florida for healthful and recreational purposes.
Chapter 267	Cultural resources are located within the project area. If resources cannot be avoided	Addresses management and preservation of the state's

<i>Historical Resources</i>	during fence installation, then the State Historic Preservation Officer would be contacted for consultation. A survey, testing, and data recovery would be conducted, as needed, to mitigate any potential adverse impacts to cultural resources. Identified resources would be managed in compliance with Federal Law and Air Force regulations.	archaeological and historical resources.
Chapter 288 <i>Commercial Development and Capital Improvements</i>	The Proposed Action would not affect future business opportunities on state lands, or the promotion of tourism in the region.	Promotes and develops general business, trade, and tourism components of the state economy.
Chapter 334 <i>Transportation Administration</i>	The Proposed Action would not affect transportation.	Addresses the state's policy concerning transportation administration.
Chapter 339 <i>Transportation Finance and Planning</i>	The Proposed Action would not affect the finance and planning needs of the state's transportation system.	Addresses the finance and planning needs of the state's transportation system.
Chapter 373 <i>Water Resources</i>	<p>An Environmental Resource Permit (ERP) from the Northwest Florida Water Management District (NFWMD) per FAC 62-346 would be required for the Proposed Action.</p> <p>Applicable permitting requirements would be satisfied in accordance with FAC 62-25 and National Pollutant Discharge Elimination System (NPDES). Eglin AFB would submit a notice of intent to use the generic permit for stormwater discharge under the NPDES program prior to project initiation according to Section 403.0885, Florida Statutes (FS). The Proposed Action would also require coverage under the generic permit for stormwater discharge from construction activities that disturb one or more acres of land (FAC 62-621).</p> <p>Eglin Water Resources (96 CEG/CEVCE) would coordinate all applicable permitting requirements in accordance with the Florida Administrative Code. Therefore, the Proposed Action would not affect water resources of the state.</p>	Addresses sustainable water management; the conservation of surface and ground waters for full beneficial use; the preservation of natural resources, fish, and wildlife; protecting public land; and promoting the health and general welfare of Floridians
Chapter 375 <i>Outdoor Recreation and Conservation Lands</i>	The Proposed Action would not affect opportunities for recreation on state lands.	Develops comprehensive multipurpose outdoor recreation plan to document recreational supply and demand, describe current recreational opportunities, estimate need for additional recreational opportunities, and propose means to meet the

		identified needs.
Chapter 376 <i>Pollutant Discharge Prevention and Removal</i>	The Proposed Action would not affect the transfer, storage, or transportation of pollutants.	Regulates transfer, storage, and transportation of pollutants, and cleanup of pollutant discharges.
Chapter 377 <i>Energy Resources</i>	The Proposed Action would not affect energy resource production, including oil and gas, and/or the transportation of oil and gas.	Addresses regulation, planning, and development of oil and gas resources of the state.
Chapter 379 <i>Fish and Wildlife Conservation</i>	<p>Prior to project initiation a red-cockaded woodpecker (RCW) survey is required. This survey will determine suitability of habitat in order to establish location of possible cavity trees in the area. If any active RCW trees are found, Section 7 consultation with the USFWS would be completed prior to clearing trees and any requirements from the consultation would be followed.</p> <p>Prior to project initiation a gopher tortoise survey is required. If a gopher tortoise burrow cannot be avoided, then the tortoise would be relocated in accordance with the Florida Fish and Wildlife Conservation Commission (FWC) protocols.</p> <p>Therefore the Proposed Action would not affect the State's policies concerning the protection of fish and wildlife resources.</p>	Addresses the management and protection of the state of Florida's wide diversity of fish and wildlife resources.
Chapter 380 <i>Land and Water Management</i>	The Proposed Action would not affect development of state lands with regional (i.e. more than one county) impacts. The Proposed Action would not include changes to coastal infrastructure such as capacity increases of existing coastal infrastructure, or use of state funds for infrastructure planning, designing or construction.	Establishes land and water management policies to guide and coordinate local decisions relating to growth and development.
Chapter 381 <i>Public Health, General Provisions</i>	The Proposed Action would not affect the state's policy concerning the public health system.	Establishes public policy concerning the state's public health system.
Chapter 388 <i>Mosquito Control</i>	The Proposed Action would not affect mosquito control efforts.	Addresses mosquito control effort in the state.
Chapter 403 <i>Environmental Control</i>	<p>Eglin's Water Resources Section (96 CEG/CEVCE) would coordinate all applicable permits in accordance with the FAC.</p> <p>Air quality impacts from the Proposed Action would be minimal. Eglin AFB</p>	Establishes public policy concerning environmental control in the state.

	would take reasonable precautions to minimize fugitive particulate (dust) emissions during fence installation activities in accordance with FAC 62-296. The Proposed Action would not affect water quality, air quality, pollution control, solid waste management, or other environmental control efforts.	
Chapter 582 <i>Soil and Water Conservation</i>	All applicable BMPs, such as erosion and sediment controls and stormwater management measures would be implemented to minimize erosion and storm water run-off, and to regulate sediment control during fence installation. Therefore, the Proposed Action would not affect soil and water conservation efforts.	Provides for the control and prevention of soil erosion.



Figure 1. Proposed Location on Eglin AFB



Figure 2. Proposed Site Location on Eglin AFB

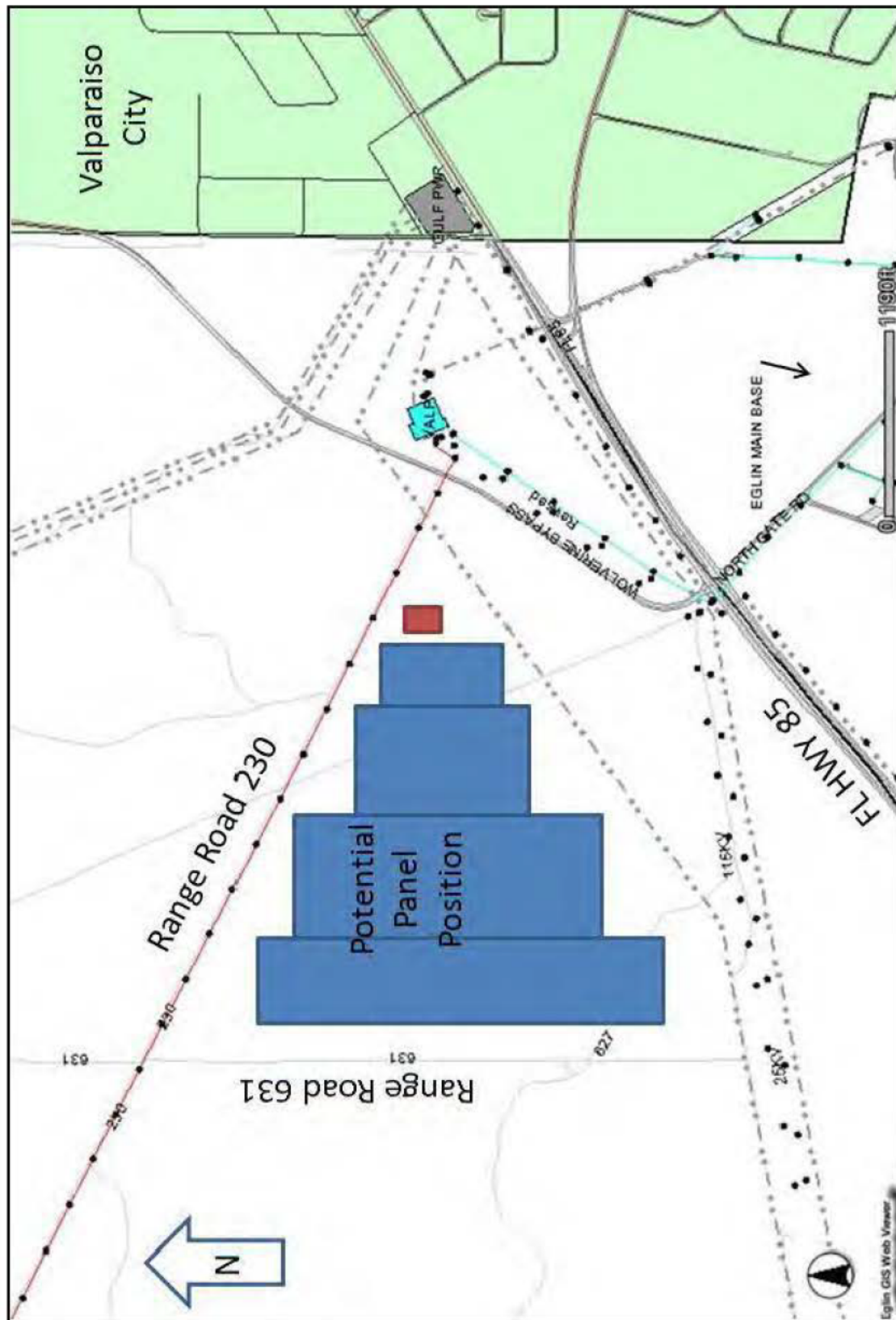


Figure 3. Overall Proposed Solar Array Site Plan

Knight, Kelly E CTR USAF AFMC 96 CEG/CEVSNW

From: Milligan, Lauren <Lauren.Milligan@dep.state.fl.us>
Sent: Thursday, November 08, 2012 9:47 AM
To: Knight, Kelly E CTR USAF AFMC 96 CEG/CEVSNW
Cc: Hagedorn, Bruce W CIV USAF AFMC 96 CEG/CEVSNW; Nunley, Jerry M Mr CTR USAF AFMC 96 CEG/CEVSN
Subject: RE: Department of the Air Force - CZMA Negative Determination - Solar PV Array

Ms. Kelly E. Knight

Environmental Scientist, SAIC

Eglin AFB – 96 CEG/CEVSNW

107 Highway 85 North

Niceville, FL 32578

RE: Department of the Air Force – Negative Determination – Installation of Solar PV Array, Eglin Air Force Base – Okaloosa County, Florida.

SAI # FL201211086410

Dear Kelly:

The Florida State Clearinghouse is in receipt of your notice regarding the U.S. Air Force's proposal to clear 40 to 90 acres of land to install a new 16.9 MW solar PV system on Eglin Air Force Base. Department staff does not object to the Air Force's negative determination and agrees that the proposed action meets the requirements of 15 CFR 930.35.

As noted in the submittal, the project will likely require an Environmental Resource Permit (ERP) from the Northwest Florida Water Management District (NFWFMD) per Chapter 62-346, Florida Administrative Code. Contact the NFWFMD's Crestview Field Office at (850) 683-5044 for further assistance and permitting information. In addition, an NPDES permit may be required from the Department's NPDES Stormwater Program in Tallahassee – please call (850) 245-7522 for additional information.

Thank you for the opportunity to review this proposal. If you have any questions or need further assistance, please don't hesitate to contact me at (850) 245-2170 or Lauren.Milligan@dep.state.fl.us.

Best regards,

Lauren

Lauren P. Milligan, Environmental Manager
Florida State Clearinghouse
Florida Department of Environmental Protection
3900 Commonwealth Blvd, M.S. 47
Tallahassee, FL 32399-3000
ph. (850) 245-2170
fax (850) 245-2190

Please take a few minutes to share your comments on the service you received from the department by clicking on this link. DEP Customer Survey <<http://survey.dep.state.fl.us/?refemail=Lauren.Milligan@dep.state.fl.us>> .

From: Knight, Kelly E CTR USAF AFMC 96 CEG/CEVSNW [<mailto:Kelly.Knight.ctr@eglin.af.mil>]
Sent: Friday, November 02, 2012 3:02 PM
To: Milligan, Lauren
Cc: Hagedorn, Bruce W CIV USAF AFMC 96 CEG/CEVSNW; Nunley, Jerry M Mr CTR USAF AFMC 96 CEG/CEVSN
Subject: Department of the Air Force - CZMA Negative Determination - Solar PV Array

Ms. Lauren Milligan, Environmental Manager, Florida State Clearinghouse

Florida Department of Environmental Protection

3900 Commonwealth Boulevard, M.S. 47

Tallahassee, FL 32399-3000

Department of the Air Force - Negative Determination - Solar PV Array, Eglin

Air Force Base (AFB), Florida

Dear Lauren:

Attached is the U.S. Air Force's proposal to provide the Florida Department of Environmental Protection (FDEP) with details for the installation of a solar photovoltaic (PV) system on Eglin Air Force Base (AFB). The proposed site is 155 acres in size and has no current mission uses; the PV system would require approximately 40 to 90 acres of the site depending on final design plans. The attached Coastal Zone Management Act (CZMA) Negative Determination details the Proposed Action.

We are submitting this CZMA Negative Determination under 15 C.F.R.930.35. Please consider a 10-day review period on this project and a response via email.

If you require additional information or have any questions or concerns, I can be reached at (850) 883-5525.

Thank you,

Kelly Knight | SAIC

Environmental Scientist | Eglin AFB Natural Resources

107 Highway 85 North | Niceville FL 32578

phone: 850.883.5525 | fax 850.882.5321

email: kelly.knight.ctr@eglin.af.mil <<mailto:kelly.knight.ctr@eglin.af.mil>>

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APPENDIX C

PUBLIC INVOLVEMENT

Notice of Availability, Public and Agency Comments, and Air Force Responses to Comments

Notice of Availability

The following Notice of Availability was published in the *Northwest Florida Daily News* on December 13, 2013. No public comments were received.

Page B4 | Daily News | Friday, December 13, 2013

Local &

Public Notification

In compliance with the National Environmental Policy Act, Eglin AFB announces the availability of the Draft Environmental Assessment for the Solar Photovoltaic Array at Eglin AFB, Fla., and Draft Finding of No Significant Impact, for public review.

The Proposed Action is for the Air Force to develop a utility-scale solar project on Eglin AFB property. The solar PV system being proposed is 16.9 megawatts (direct current output) in size, with single-axis tracking and monocrystalline solar modules. The solar system would be installed on Eglin AFB property and connected to an Eglin AFB-owned substation.

The system would contain 69,000 solar panels positioned on approximately 85 acres of cleared land, and an additional 150-foot buffer is needed to eliminate shading and minimize the potential for falling trees or branches that could potentially damage the solar panels. The solar PV system would generate over 30,000 megawatt-hours (MWh) of electricity per year, which is more than 7.5 percent of Eglin AFB's usage in 2012.

Your comments on this Draft Environmental Assessment are requested. Letters or other written or oral comments provided may be published in the Final EA. As required by law, comments will be addressed in the Final EA and made available to the public. Any personal information provided will be used only to identify your desire to make a statement during the public comment period or to fulfill requests for copies of the Final EA or associated documents. Private addresses will be compiled to develop a mailing list for those requesting copies of the Final EA. However, only the names and respective comments of respondent individuals will be disclosed. Personal home addresses and phone numbers will not be published in the Final EA.

Copies of the Draft EA and Draft FONSI may be reviewed online at www.eglin.af.mil/eglin/documents.asp from Dec. 13th until Dec. 31. Local libraries have Internet access, and librarians can assist in accessing this document. Comments must be received by Jan. 4th, to be included in the Final REA.

For more information or to comment on these proposed actions, contact: Mike Spaits, 96 TW Public Affairs, 101 West D Ave., Ste. 238, Eglin AFB, Florida 32542 or email: mike.spaits@eglin.af.mil. Tel: (850) 882-2836. Fax: (850) 882-4894.

NORTHWEST FL
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NORTHWEST FLORIDA

Daily News

Published Daily
Fort Walton Beach, Florida
Distributed in Okaloosa, Santa Rosa & Walton Counties

State of Florida, County of Okaloosa

Before the undersigned authorized personally appeared Maurice Wilke,
who on oath says that (s)he is Legal Advertising Clerk
of the Northwest Florida Daily News,
a daily newspaper published at Fort Walton Beach, in Okaloosa County, Florida;
that the attached copy of advertisement, being a Legal 2095926
in the matter of Public Notification
Solar Photovoltaic Array
in the Okaloosa County Court, was published in said newspaper in the issues of
December 13, 2013

Affiant further says that the said Northwest Florida Daily News is a newspaper published at Fort Walton Beach, in said Okaloosa County, Florida, and that the said newspaper has heretofore been continuously published in said Okaloosa County, Florida, each day, and has been entered as second class mail matter at the post office in Fort Walton Beach, in said Okaloosa County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that (s)he has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

STATE OF FLORIDA COUNTY OF OKALOOSA

Subscribed and sworn to (or affirmed) before me this 13 December 2013
(Date)

by Maurice Wilke, who is/are personally known to me or

has/have produced Personally Known as identification.
(Type of Identification)

Eleanor H. Notary Public, Commission No. _____
(Signature)
(Name of Notary typed, printed or stamped)



Agency Comments



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

MARJORY STONEMAN DOUGLAS BUILDING
3900 COMMONWEALTH BOULEVARD
TALLAHASSEE, FLORIDA 32399-3000

RICK SCOTT
GOVERNOR

HERSCHEL T. VINYARD JR.
SECRETARY

November 8, 2013

Mr. Henry C. McLaurine, Project Manager
Science Applications International Corporation
1140 North Eglin Parkway
Shalimar, FL 32579

RE: Department of the Air Force Base – Draft Environmental Assessment (EA) for the Solar Photovoltaic Array at Eglin Air Force Base – Okaloosa County, Florida.
SAI # FL201309306740C

Dear Mr. McLaurine:

The Florida State Clearinghouse has coordinated a review of the referenced draft EA under the following authorities: Presidential Executive Order 12372; § 403.061(42), *Florida Statutes*; the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended; and the National Environmental Policy Act, 42 U.S.C. §§ 4321-4347, as amended.

The Florida Fish and Wildlife Conservation Commission (FWC) indicates that Eglin Air Force Base (AFB) will comply with the state's Gopher Tortoise Permitting requirements, resurvey the area 30 days prior to commencement of land clearing, relocate all gopher tortoises to other areas of Eglin AFB, and advise construction workers to halt activities if indigo snakes or gopher tortoises are sighted. Surveys for red-cockaded woodpeckers will be conducted in longleaf pine areas and buffers and water quality protections will be implemented for Okaloosa darter streams as well. FWC agrees with Eglin AFB's procedures to comply with the applicable guidelines for protection of federally and state-listed species. Please see the enclosed FWC letter for additional details, or contact Mr. Theodore Hoehn at (850) 488-8792 or Ted.Hoehn@MyFWC.com.

The Florida Department of Environmental Protection's (DEP) Northwest District Office staff in Pensacola advises that the applicant will likely be required to apply for and obtain an Environmental Resource Permit under Chapter 62-330, *Florida Administrative Code*, from the Northwest Florida Water Management District or DEP for stormwater management at the project site. For further information and assistance, please contact Mr. Scott Casey at (850) 595-0574.

Based on the information contained in the draft EA and the enclosed state agency comments, the state has determined that, at this stage, the proposed activity is consistent with the Florida Coastal Management Program (FCMP). To ensure the project's continued consistency with the FCMP, the regulatory concerns identified by our reviewing agencies must be addressed prior to

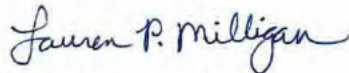
www.dep.state.fl.us

Mr. Henry C. McLaurine
Page 2 of 2
November 8, 2013

project implementation. The state's continued concurrence will be based on the activity's compliance with FCMP authorities, including federal and state monitoring of the activity to ensure its continued conformance, and the adequate resolution of issues identified during this and subsequent regulatory reviews. The state's final concurrence of the project's consistency with the FCMP will be determined during the environmental permitting process, in accordance with Section 373.428, *Florida Statutes*.

Thank you for the opportunity to review the proposed project. Should you have any questions regarding this letter, please contact Ms. Jillaine M. Owens at (850) 245-2187.

Yours sincerely,



Lauren P. Milligan, Coordinator
Florida State Clearinghouse
Office of Intergovernmental Programs

LPM/jmo
Enclosures

cc: Scott Sanders, FWC
Brandy Smith, DEP, Northwest District



Florida

Department of Environmental Protection

"More Protection, Less Process"



Categories

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Project Information

Project:	FL201309306740C
Comments Due:	11/07/2013
Letter Due:	11/26/2013
Description:	DEPARTMENT OF THE AIR FORCE - DRAFT ENVIRONMENTAL ASSESSMENT FOR THE SOLAR PHOTOVOLTAIC ARRAY AT EGLIN AIR FORCE BASE - OKALOOSA COUNTY, FLORIDA.
Keywords:	USAF - DEA, SOLAR PHOTOVOLTAIC ARRAY AT EGLIN AFB - OKALOOSA CO.
CFDA #:	12.200

Agency Comments:

FISH and WILDLIFE COMMISSION - FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

The FWC notes that the Draft EA indicates that Eglin AFB will comply with the state's Gopher Tortoise Permitting requirements, resurvey the area 30 days prior to commencement of land clearing, relocate all gopher tortoises to other areas of Eglin, and advise construction workers to halt activities if indigo snakes or gopher tortoises are sighted. Surveys for red-cockaded woodpeckers will be conducted in longleaf pine areas and buffers and water quality protections will be implemented for Okaloosa darter streams as well. FWC agrees with Eglin AFB's procedures to comply with the applicable guidelines for protection of federally and state-listed species.

NORTHWEST FLORIDA WMD - NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT

No Comments

ENVIRONMENTAL PROTECTION - FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

The DEP's Northwest District Office staff in Pensacola advises that the applicant will likely be required to apply for and obtain an Environmental Resource Permit under Chapter 62-330, Florida Administrative Code, from the Northwest Florida Water Management District or DEP for stormwater management at the project site. For further information and assistance, please contact Mr. Scott Casey at (850) 595-0574.

STATE - FLORIDA DEPARTMENT OF STATE

The DOS has no comments on the subject Draft EA.

WEST FLORIDA RPC - WEST FLORIDA REGIONAL PLANNING COUNCIL

No Comments - Generally consistent with the West Florida Strategic Regional Policy Plan.

OKALOOSA - OKALOOSA COUNTY

No Comments

For more information or to submit comments, please contact the Clearinghouse Office at:

3900 COMMONWEALTH BOULEVARD, M.S. 47
TALLAHASSEE, FLORIDA 32399-3000
TELEPHONE: (850) 245-2161
FAX: (850) 245-2190

Visit the [Clearinghouse Home Page](#) to query other projects.

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(800) 955-8770 (V)

MyFWC.com

October 22, 2013

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OCT 24 2013

**DEP Office of
Intergov't Programs**

Ms. Lauren P. Milligan
Environmental Manager
Agency Contact and Coordinator (SCH)
Florida Department of Environmental Protection
3900 Commonwealth Boulevard, MS 47
Tallahassee, FL 32399-3000
Lauren.Milligan@dep.state.fl.us

Re: SAI #FL201309306740C, Department of the Air Force, Draft Environmental Assessment for the Solar Photovoltaic Array, Eglin Air Force Base, Okaloosa County, Florida

Dear Ms. Milligan:

Florida Fish and Wildlife Conservation Commission (FWC) staff has reviewed the draft Environmental Assessment (DEA) for the above-referenced project, and provides the following comments and recommendations for your consideration in accordance with Chapter 379, Florida Statutes, and in accordance with the Coastal Zone Management Act, Florida's Coastal Management Program.

Eglin Air Force Base (AFB) proposes to construct the solar photovoltaic array on a 165-acre site containing sandhill habitat with longleaf pine and hardwoods located at the intersection of Highway 85 and Range Road 230, but it is likely that only 117 acres will be required for the project. A maximum of 165 acres would be cleared, graded and compacted for ground stability, covered with a semi-impervious gravel layer and grass plantings to cover the soil surface under the array, and a 150-foot buffer of the same construct will be placed around the array. The text and Figure 3-4 in the DEA indicates that fourteen active gopher tortoise (*Gopherus polyphemus*, State Threatened) burrows and 10 inactive burrows were discovered in and around the project site. Also, the site is near Tom's Creek, an Okaloosa darter (*Etheostoma okaloosae*, Federally Threatened) inhabited stream. The site may also support the eastern indigo snake (*Drymarchon couperi*, Federally Threatened) and the red-cockaded woodpecker (RCW) (*Picoides borealis*, Federally Endangered).

The DEA indicates that Eglin AFB will comply with state Gopher Tortoise Permitting requirements and resurvey the area 30 days prior to commencement of clearing. Further, all gopher tortoises will be relocated to other portions of Eglin Reservation by Eglin Natural Resources Section staff. The Air Force would further minimize the potential for negative impacts to listed species by advising all workers to halt activities if an indigo snake or gopher tortoise is sighted and allow it time to move to safety. Surveys will also be conducted for any RCWs that may occur in the longleaf pines found within the project area.

We believe that the Management Actions described in Section 5-2 of the DEA will provide adequate buffers and water quality protections to the Okaloosa darter streams and protect the biological resources that have been identified onsite. We have worked well with Eglin Natural Resources Section staff and agree with their procedures to comply

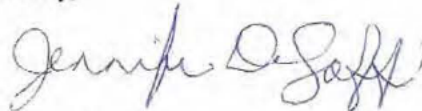
Ms. Lauren P. Milligan

Page 2

October 22, 2013

with applicable guidelines and protect the state- and federally listed species that have been identified in the DEA. We concur that the DEA is consistent with our Chapter 379 authorities, under Florida's Coastal Management Program. If you need any further assistance, please do not hesitate to contact Jane Chabre either by phone at (850) 410-5367 or at FWCConservationPlanningServices@MyFWC.com. If you have specific technical questions regarding the content of this letter, please contact Theodore Hoehn at (850) 488-8792 or by email at ted.hoehn@myfwc.com.

Sincerely,



Jennifer D. Goff
Land Use Planning Program Administrator
Office of Conservation Planning Services

jdg/th

ENV 1-2-2

Eglin AFB Solar Photo Voltaic Array_18196_102213.doc

cc: Mr. Henry McLaurine, SAIC, mclaurineh@saic.com



FLORIDA DEPARTMENT of STATE

RICK SCOTT
Governor

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OCT 29 2013

DEP Office of
Intergov't Programs

KEN DETZNER
Secretary of State

Florida State Clearinghouse
Agency Contact and Coordinator (SCH)
3900 Commonwealth Blvd. MS-47
Tallahassee, Florida 32399-3000

October 18, 2013

Re: DHR Project File No.: 2013-4531 / Received by DHR: October 3, 2013
*Section 106 Review: Department of the Air Force – Draft Environmental Assessment for the Solar
Photovoltaic Array at Eglin Air Force Base
Okaloosa County, Florida*

To Whom It May Concern:

Our office received and reviewed the referenced project in accordance with the *National Environmental Policy Act of 1969*, and implementing regulations. The State Historic Preservation Officer is to advise and assist state and federal agencies when identifying historic properties, assessing effects upon them, and considering alternatives to avoid or minimize adverse effects.

Based on the information provided, the State Historic Preservation Officer has no comment on the Draft Environmental Assessment for this project.

For any questions concerning our comments, please contact Desiree Estabrook, Historic Sites Specialist, at Desiree.Estabrook@dos.myflorida.com or by phone at 850.245.6333. We appreciate your continued interest in protecting Florida's historic properties.

Sincerely,

Robert R. Bendus, Director
Division of Historical Resources
and State Historic Preservation Officer



DIVISION OF HISTORICAL RESOURCES
R. A. Gray Building • 500 South Bronough Street • Tallahassee, Florida 32399-0250
Telephone: 850.245.6300 • www.flheritage.com
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**RESPONSE TO COMMENTS FOR DRAFT ENVIRONMENTAL ASSESSMENT FOR
THE SOLAR PHOTOVOLTAIC ARRAY AT EGLIN AFB, FLA., AND DRAFT
FINDING OF NO SIGNIFICANT IMPACT**

A public notice was published in the *Northwest Florida Daily News* on Dec. 13, 2013 to disclose completion of the Draft EA, and Draft FONSI, selection of the preferred alternative, and request for comments during the 15-day pre-decisional comment period.

The 15-day comment period ended on Dec. 31, with the comments required to this office not later than Jan. 4, 2014. No comments were received during this period.

//Signed//
Mike Spaits
Public Information Specialist

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